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1 Here are some statements about rhombuses. Write T or F beside each statement to show whether it is true or false. Then use the properties of shapes to explain each answer.

Statement	T or F	Explanation
ex A rhombus is a trapezoid.	F	A trapezoid has exactly 1 pair of parallel sides. A rhombus has 2 pairs of parallel sides, so it can't be a trapezoid. **Explanations will vary.**
a A rhombus is a parallelogram.	**T**	**A rhombus has 2 pairs of parallel sides, which makes it a parallelogram.**
b A rhombus is a rectangle.	**F**	**A rhombus does not have to have 90° corners but a rectangle does.**
c A rhombus is a quadrilateral.	**T**	**A rhombus has four sides, which makes it a quadrilateral.**
d A square is a special kind of rhombus.	**T**	**A square is a rhombus with 90° corners.**

2 Why do people say that a square is a special kind of rectangle? Use properties of shapes in your answer.

Answers will vary.
Rectangles are parallelograms that have 90° corners. A square is a specific rectangle that has 4 congruent sides.

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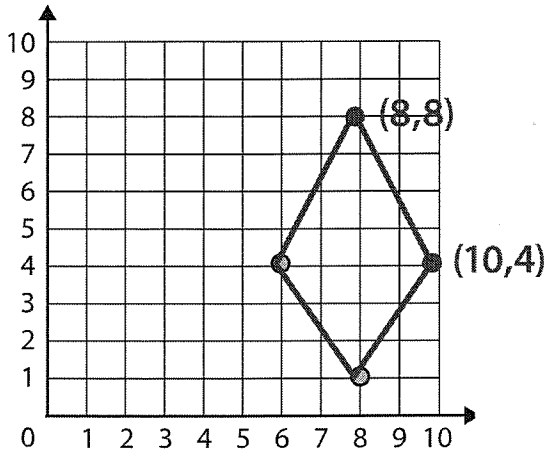
3 Use this coordinate grid to complete the following problems.



a Write an ordered pair for each point shown on the grid.

(6 , 4) (8 , 1)

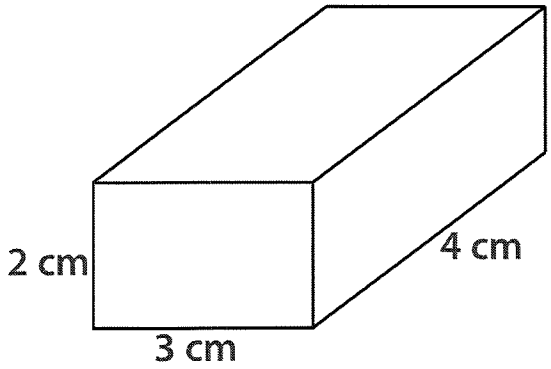
b Add these ordered pairs to the grid, and label each one: (8, 8) (10, 4).

c Connect the points on the grid to form a quadrilateral. Circle all the names that could be used to describe the figure you made.

(polygon) (kite) parallelogram rhombus

4 Measure and label each dimension—length, width, and height—of this rectangular prism in centimeters.

a Use the information to find the volume of the prism. Label your answer with the correct units.



Volume 24 cm^3

b Circle the formulas you could use to find the volume of the prism above.

$V = l \times w$ ($V = l \times w \times h$) $V = l + w + h$ ($V = b \times h$)

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5 The area of the base of a rectangular prism is 45 cm^2. The height of the prism is 6 cm. What is the volume of the prism? Use numbers, labeled sketches, or words to model and solve this problem. Label your answer with the correct units.

Work will vary.
Volume equals base times height.
$45 \times 6 = 45 \times (2 \times 3) = (45 \times 2) \times 3 = 90 \times 3 = 270$

The volume of the prism is **270 cm^3**

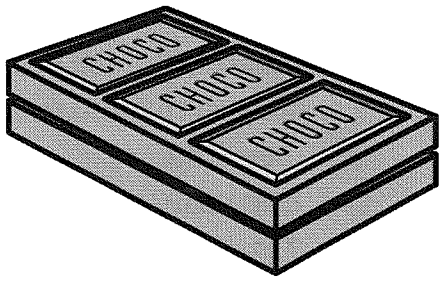
6 If Matthew knows the volume of a rectangular prism is 132 m^3 and the area of the base is 22 m^2, what is the height? Use numbers, labeled sketches, or words to model and solve this problem. Label your answer with the correct units.

Work will vary.
Volume equals base times height.
$132 = 22 \times h$; $132 \div 22 = h = 6$

The height of the rectangular prism is **6 meters**

7 Katy measured a mini-candy bar in the shape of a rectangular prism. It was 5 mm tall, 40 mm long, and 20 mm wide. Then she stacked 2 of the mini-candy bars on top of each other. What is the volume of the 2 stacked candy bars? Use numbers, labeled sketches, or words to model and solve this problem. Label your answer with the correct units.

Work will vary.
Volume of two candy bars equals length × width × height × 2.
$(5 \times 40 \times 20) \times 2 = 4{,}000 \times 2 = 8{,}000$



The volume of the 2 stacked candy bars is **8,000 mm^3**

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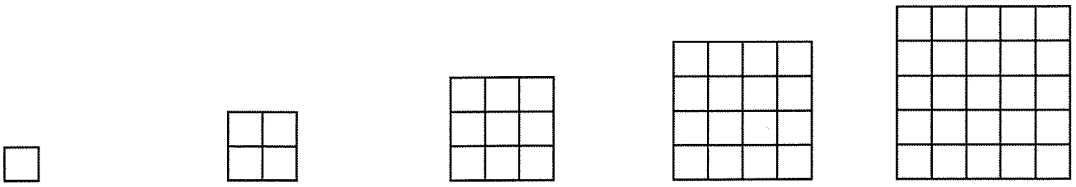
8 Darius used tiles to build the sequence of growing squares shown here.



Square 1 Square 2 Square 3 Square 4 Square 5

Record the perimeter and the area of each square in the table below. The first one is done for you.

	Square 1	Square 2	Square 3	Square 4	Square 5
Perimeter	4	8	12	16	20
Area	1	4	9	16	25

9 Darius decided to make a graph about his sequence of squares, but he was only able to partly finish.

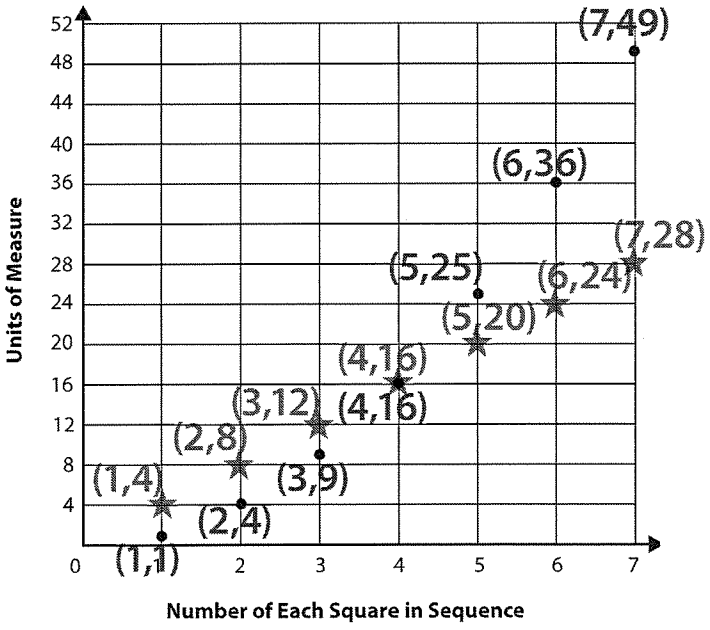
a Did Darius graph the area or the perimeter of the squares?

The area

b Label each of the ordered pairs that Darius graphed.

c Graph and label the ordered pairs for the other measurement and fill in the key.

d Describe the shape of each set of points on the graph—the points for the perimeters of the squares, and the points for the areas of the squares. Why are they different?



Explanations will vary. Example:

The points for the perimeters go up in a straight line. The points for area go up in a curve and as they go on, they get bigger than the perimeter. They're different because the perimeter only adds 4 more each time. The area goes up by more and more each time.

