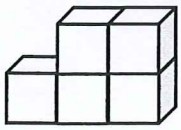
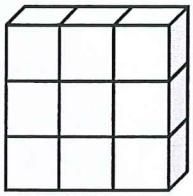
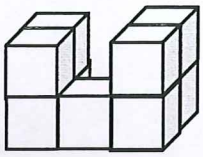
Name _____ Date _____

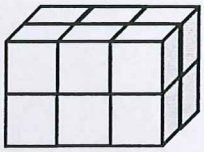
1. Use your centimeter cubes to build the figures pictured below on centimeter grid paper. Find the total volume of each figure you built, and explain how you counted the cubic units. Be sure to include units.

A. 

B. 

C. 

D. 

E. 

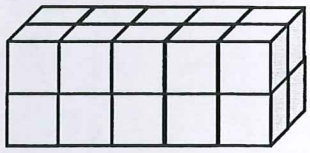
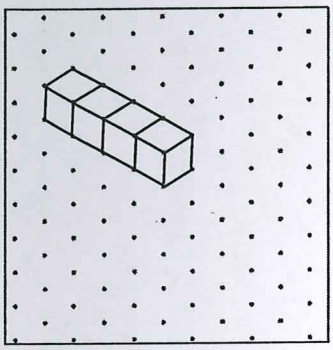
F. 

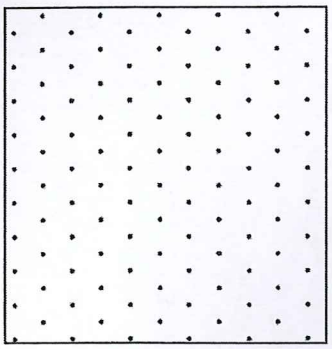
Figure	Volume	Explanation
A		
B		
C		
D		
E		
F		

2. Build 2 different structures with the following volumes using your unit cubes. Then, draw one of the figures on the dot paper. One example has been drawn for you.

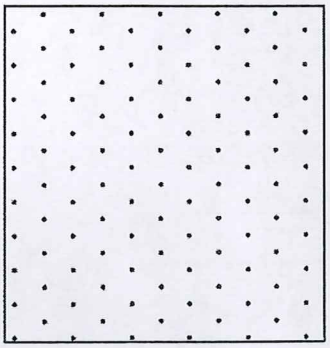
a. 4 cubic units



b. 7 cubic units

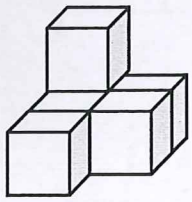


c. 8 cubic units



3. Joyce says that the figure below, made of 1 cm cubes, has a volume of 5 cubic centimeters.

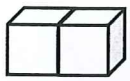
a. Explain her mistake.

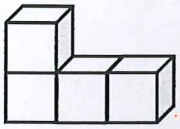


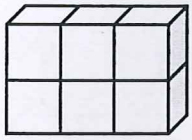
b. Imagine if Joyce wants to build a second layer of the same structure identical to the figure above. What would its volume be then? Explain how you know.

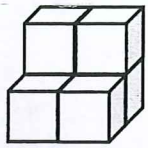
Name _____ Date _____

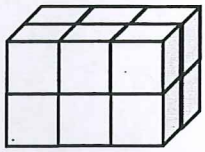
1. The following solids are made up of 1 cm cubes. Find the total volume of each figure, and write it in the chart below.

A. 

B. 

C. 

D. 

E. 

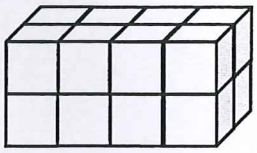
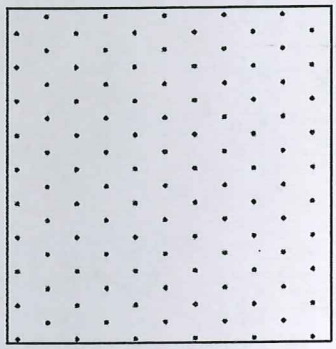
F. 

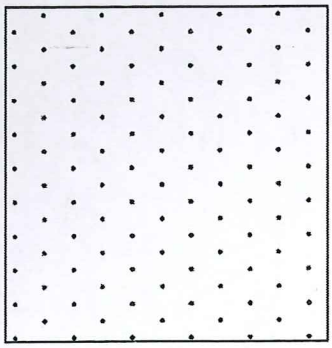
Figure	Volume	Explanation
A		
B		
C		
D		
E		
F		

2. Draw a figure with the given volume on the dot paper.

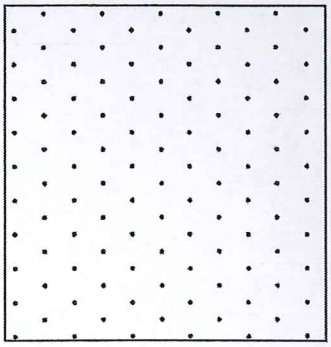
a. 3 cubic units



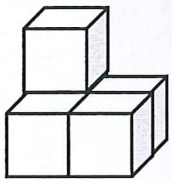
b. 6 cubic units



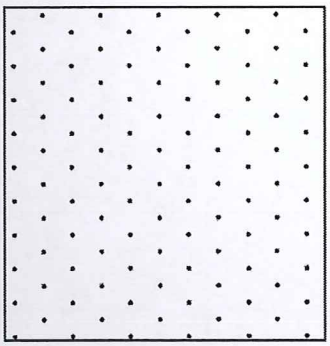
c. 12 cubic units

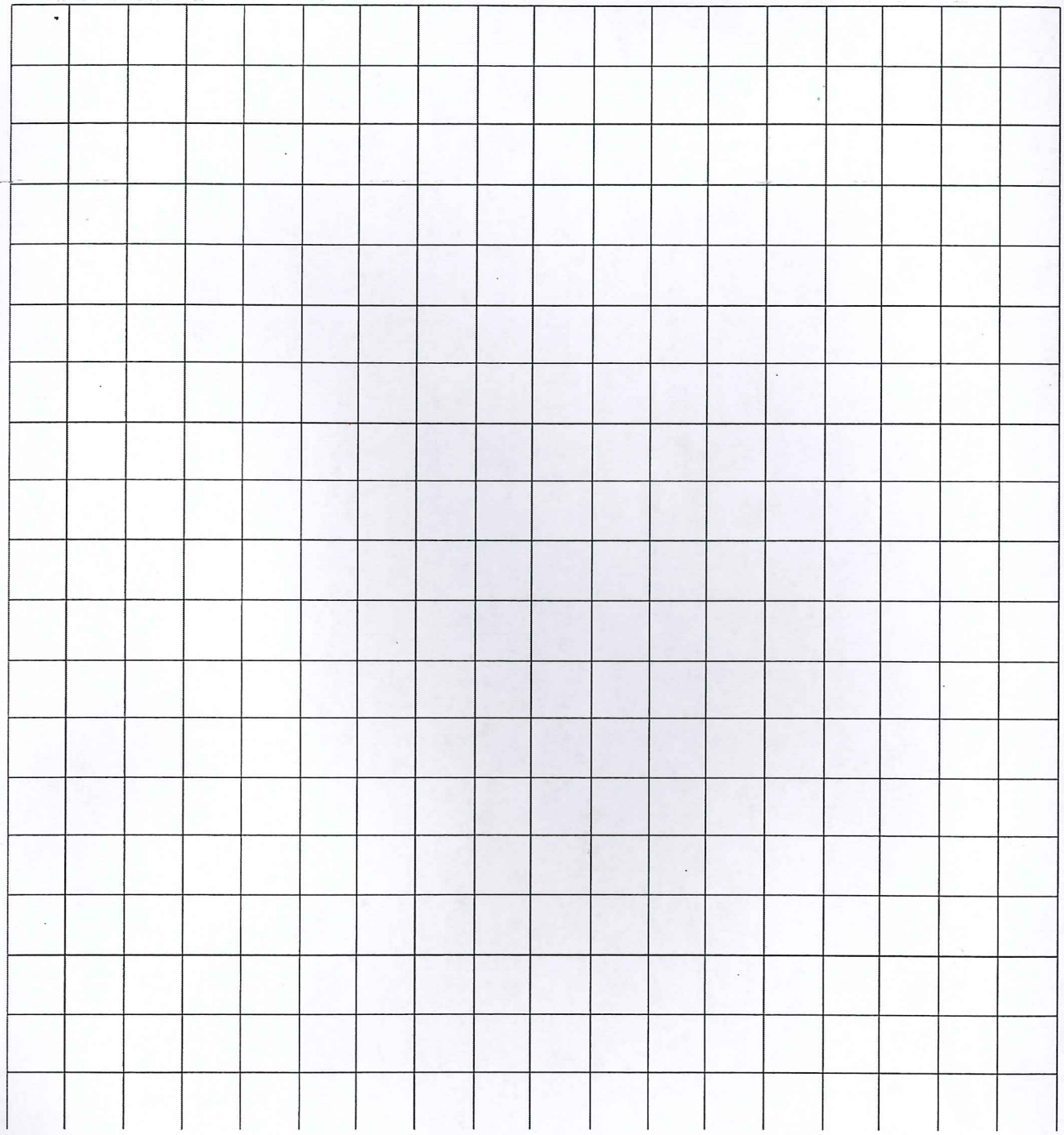


3. John built and drew a structure that has a volume of 5 cubic centimeters. His little brother tells him he made a mistake because he only drew 4 cubes. Help John explain to his brother why his drawing is accurate.

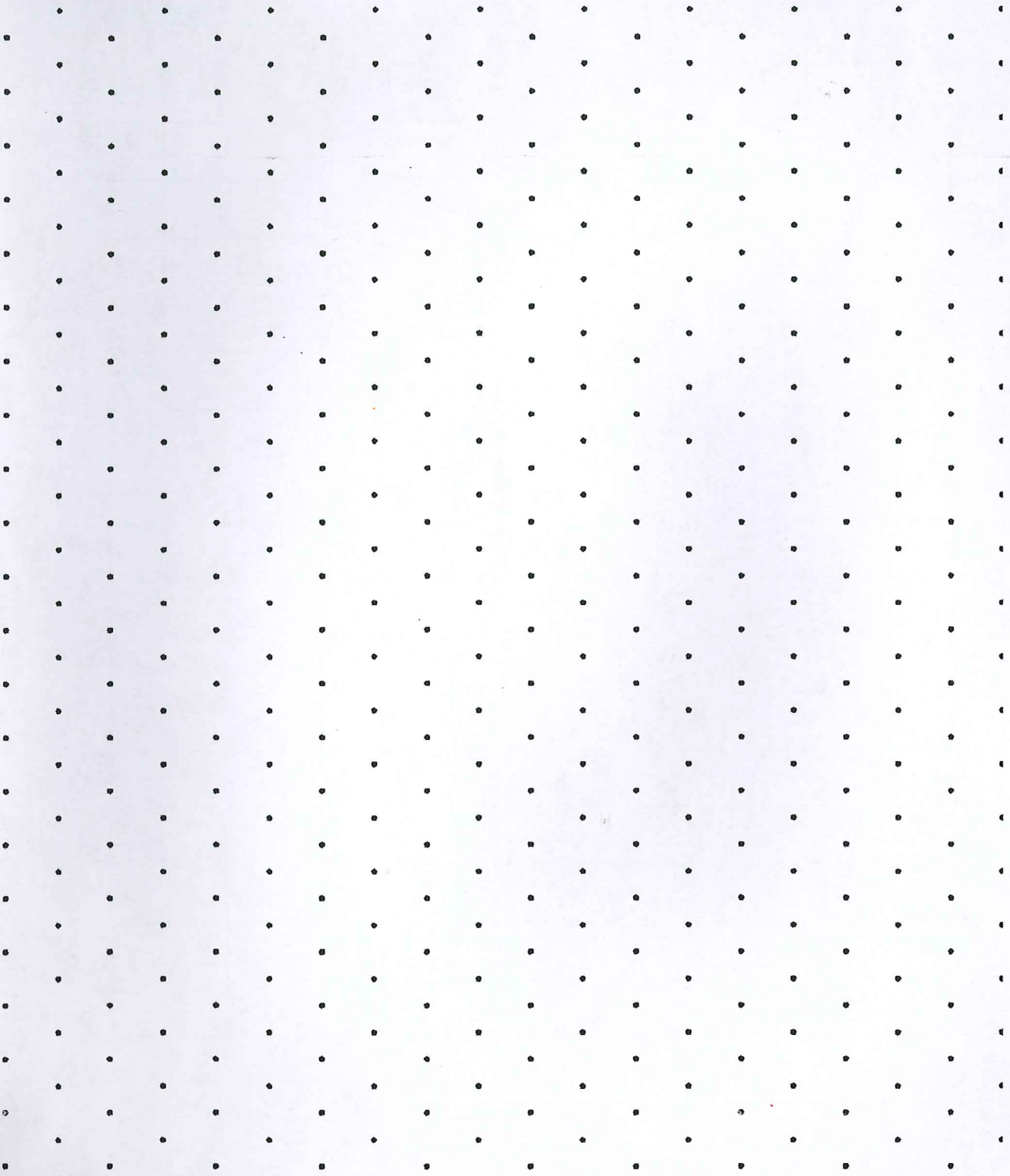


4. Draw another figure below that represents a structure with a volume of 5 cubic centimeters.





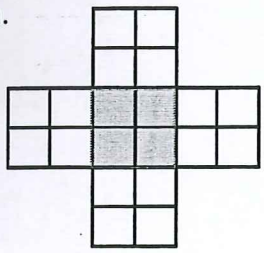
centimeter grid paper



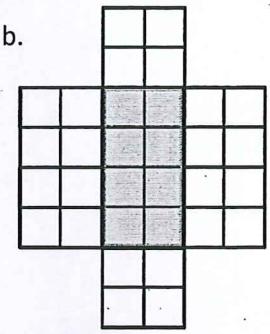
isometric dot paper

Name _____ Date _____

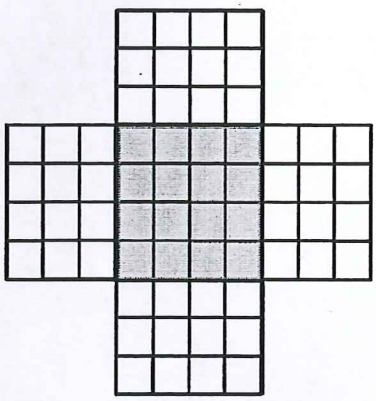
1. Shade the following figures on centimeter grid paper. Cut and fold each to make 3 open boxes, taping them so they hold their shapes. Pack each box with cubes. Write how many cubes fill the box.

a. 

Number of cubes: _____

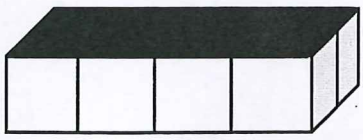
b. 

Number of cubes: _____

c. 

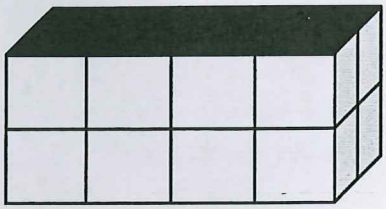
Number of cubes: _____

2. Predict how many centimeter cubes will fit in each box, and briefly explain your prediction. Use cubes to find the actual volume. (The figures are not drawn to scale.)

a. 

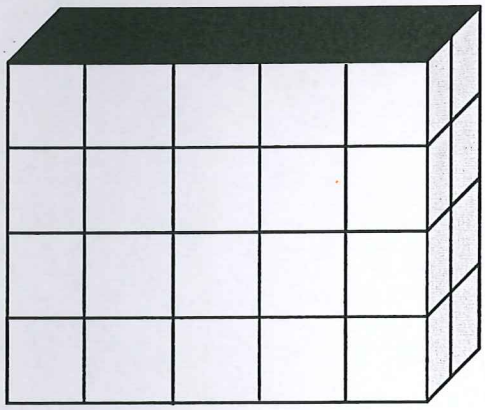
Prediction: _____

Actual: _____

b. 

Prediction: _____

Actual: _____

c. 

Prediction: _____

Actual: _____

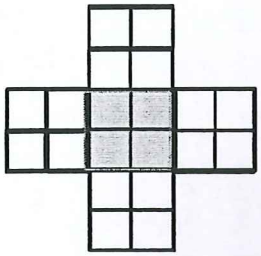
3. Cut out the net in the template, and fold it into a cube. Predict the number of 1-centimeter cubes that would be required to fill it. Test your prediction using as few cubes as possible. What did you discover?

Prediction: _____

What I discovered:

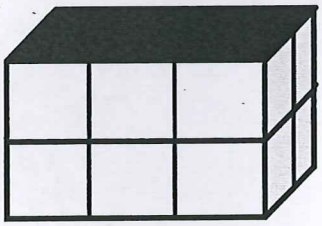
Name _____ Date _____

1. If this net were to be folded into a box, how many cubes would fill it?



Number of cubes: _____

2. Predict how many centimeter cubes will fit in the box, and briefly explain your prediction. Use cubes to find the actual volume. (The figure is not drawn to scale.)



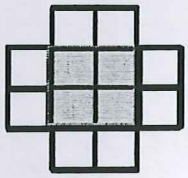
Prediction: _____

Actual: _____

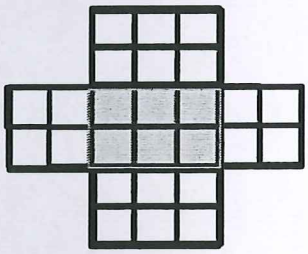
Name _____ Date _____

1. Make the following boxes on centimeter grid paper. Cut and fold each to make 3 open boxes, taping them so they hold their shapes. How many cubes would fill each box? Explain how you found the number.

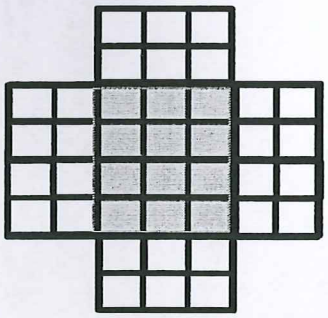
a. Number of cubes: _____



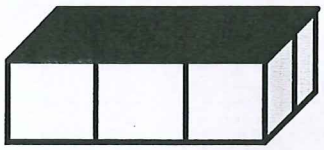
b. Number of cubes: _____



c. Number of cubes: _____

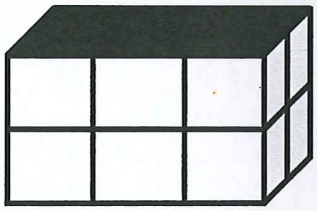


2. How many centimeter cubes would fit inside each box? Explain your answer using words and diagrams on the box. (The figures are not drawn to scale.)

a. 

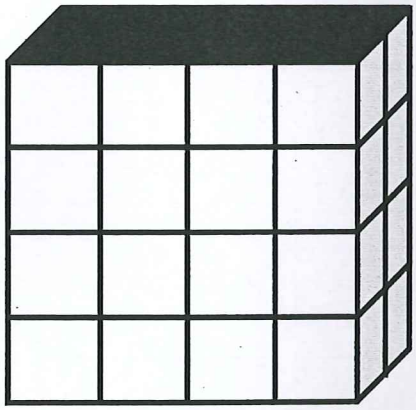
Number of cubes: _____

Explanation:

b. 

Number of cubes: _____

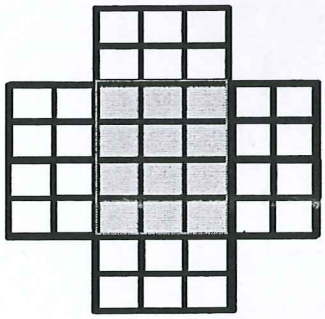
Explanation:

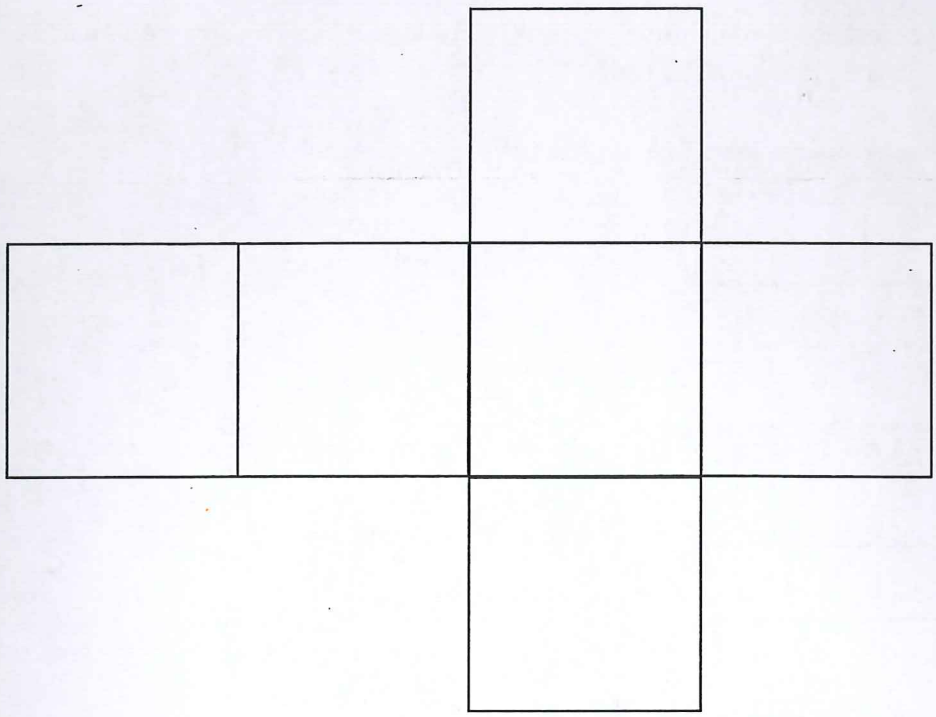
c. 

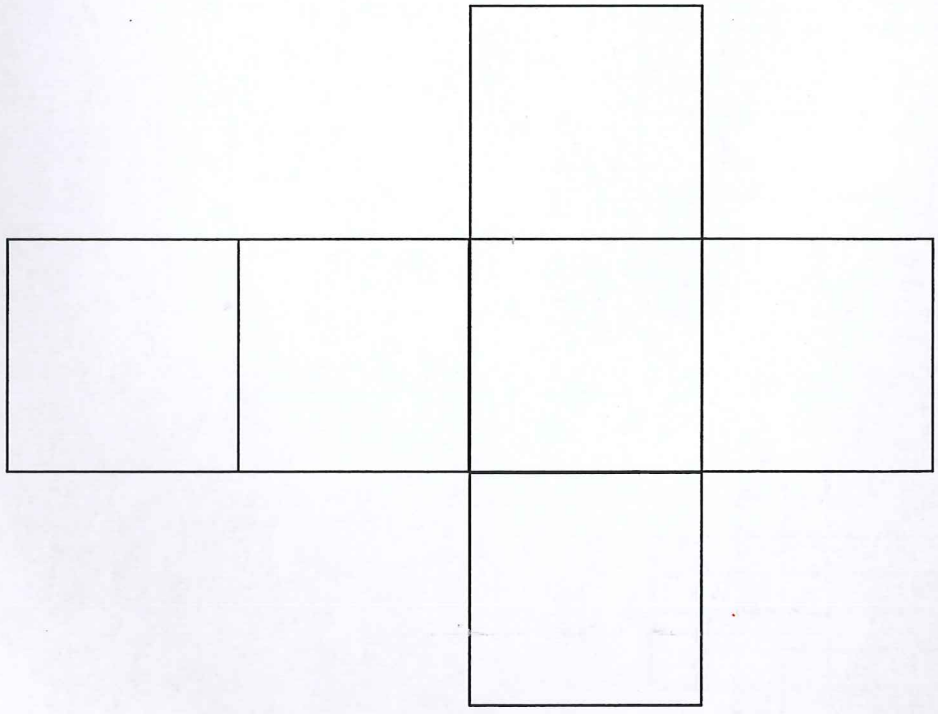
Number of cubes: _____

Explanation:

3. The box pattern below holds 24 1-centimeter cubes. Draw two different box patterns that would hold the same number of cubes.







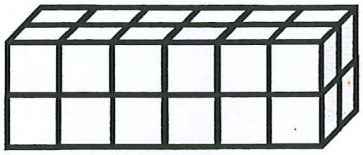
net

Name _____ Date _____

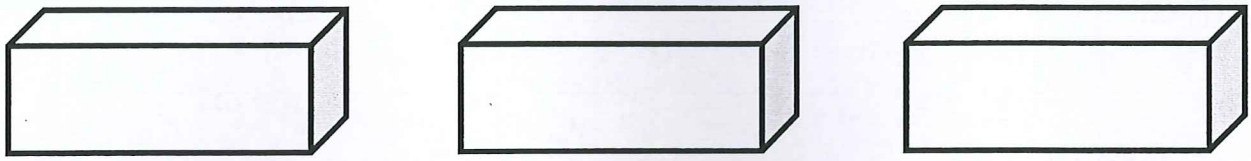
1. Use the prisms to find the volume.

- Build the rectangular prism pictured below to the left with your cubes, if necessary.
- Decompose it into layers in three different ways, and show your thinking on the blank prisms.
- Complete the missing information in the table.

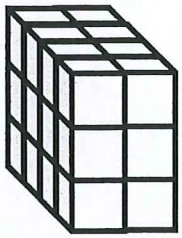
a.



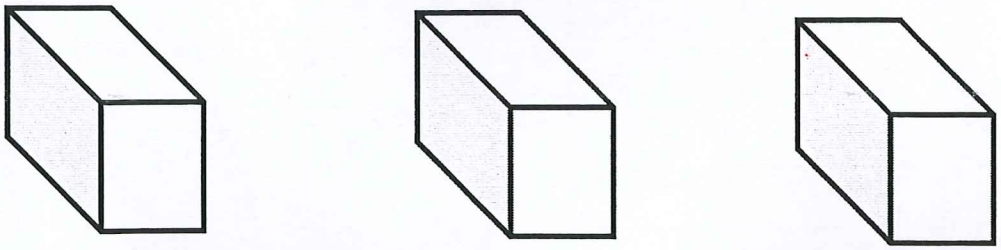
Number of Layers	Number of Cubes in Each Layer	Volume of the Prism
		cubic cm
		cubic cm
		cubic cm



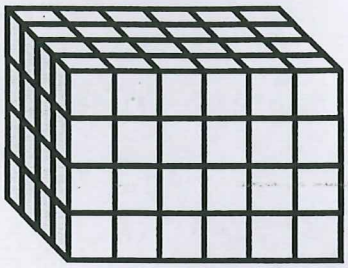
b.



Number of Layers	Number of Cubes in Each Layer	Volume of the Prism
		cubic cm
		cubic cm
		cubic cm



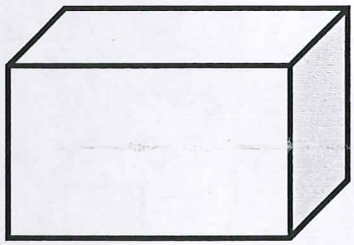
2. Josh and Jonah were finding the volume of the prism to the right. The boys agree that 4 layers can be added together to find the volume. Josh says that he can see on the end of the prism that each layer will have 16 cubes in it. Jonah says that each layer has 24 cubes in it. Who is right? Explain how you know using words, numbers, and/or pictures.



3. Marcos makes a prism 1 inch by 5 inches by 5 inches. He then decides to create layers equal to his first one. Fill in the chart below, and explain how you know the volume of each new prism.

Number of Layers	Volume	Explanation
2		
4		
7		

4. Imagine the rectangular prism below is 6 meters long, 4 meters tall, and 2 meters wide. Draw horizontal lines to show how the prism could be decomposed into layers that are 1 meter in height.



It has _____ layers from bottom to top.

Each layer contains _____ cubic units.

The volume of this prism is _____.

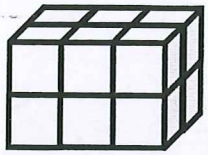
Name _____ Date _____

1. Use unit cubes to build the figure to the right and fill in the missing information.

   Number of layers: _____

   Number of cubes in each layer: _____

   Volume: _____ cubic centimeters

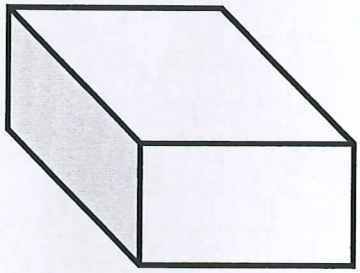


2. This prism measures 3 units by 4 units by 2 units. Draw the layers as indicated.

   Number of layers: 4

   Number of cubic units in each layer: 6

   Volume: _____ cubic centimeters



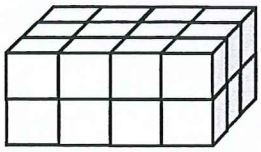
Name _____ Date _____

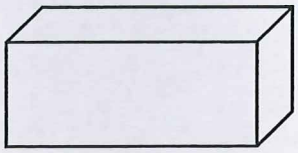
1. Use the prisms to find the volume.

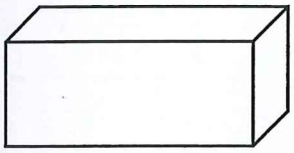
- The rectangular prisms pictured below were constructed with 1 cm cubes.
- Decompose each prism into layers in three different ways, and show your thinking on the blank prisms.
- Complete each table.

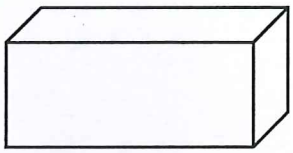
a.

Number of Layers	Number of Cubes in Each Layer	Volume of the Prism
		cubic cm
		cubic cm
		cubic cm



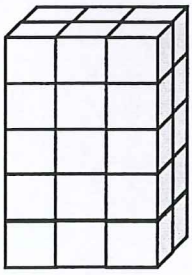


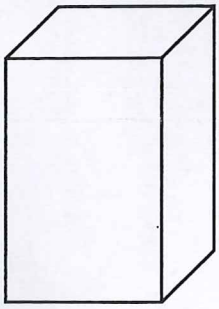


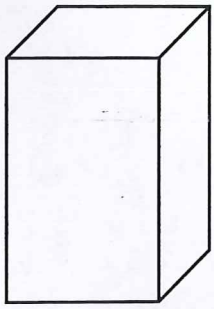


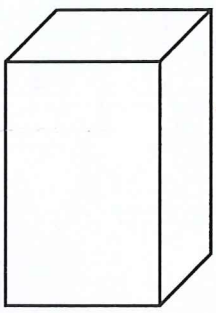
b.

Number of Layers	Number of Cubes in Each Layer	Volume of the Prism
		cubic cm
		cubic cm
		cubic cm

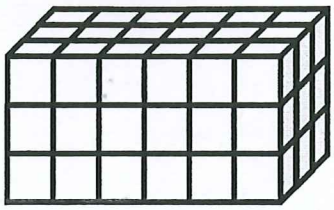








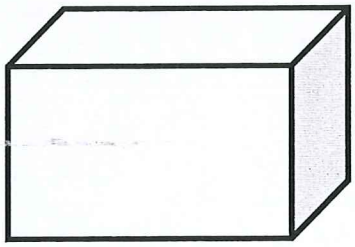
2. Stephen and Chelsea want to increase the volume of this prism by 72 cubic centimeters. Chelsea wants to add eight layers, and Stephen says they only need to add four layers. Their teacher tells them they are both correct. Explain how this is possible.



3. Juliana makes a prism 4 inches across and 4 inches wide but only 1 inch tall. She then decides to create layers equal to her first one. Fill in the chart below, and explain how you know the volume of each new prism.

Number of Layers	Volume	Explanation
3		
5		
7		

4. Imagine the rectangular prism below is 4 meters long, 3 meters tall, and 2 meters wide. Draw horizontal lines to show how the prism could be decomposed into layers that are 1 meter in height.



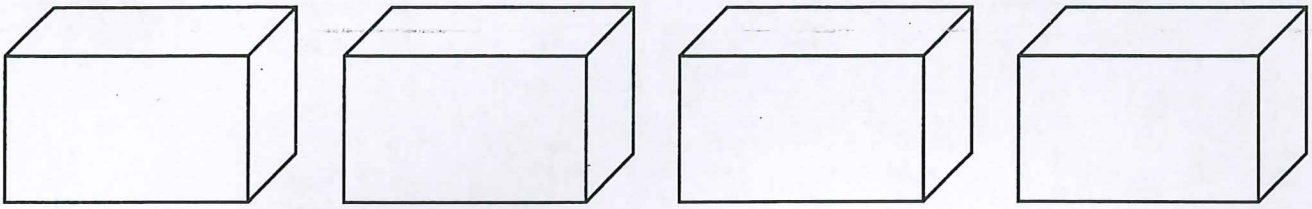
It has _____ layers from left to right.

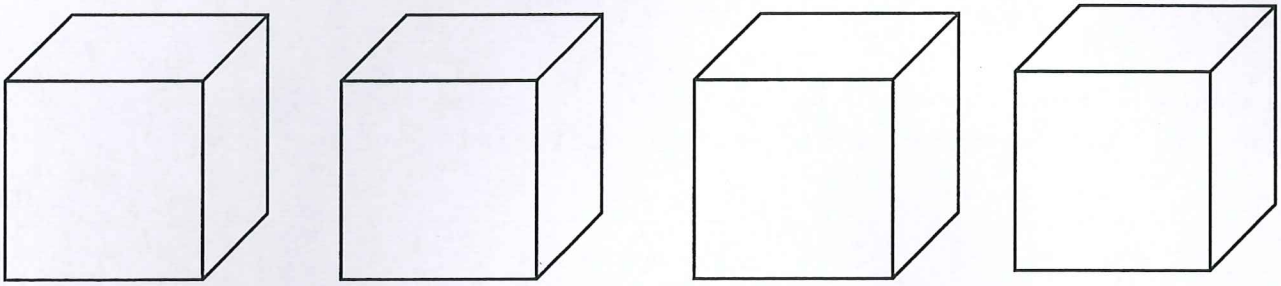
Each layer contains _____ cubic units.

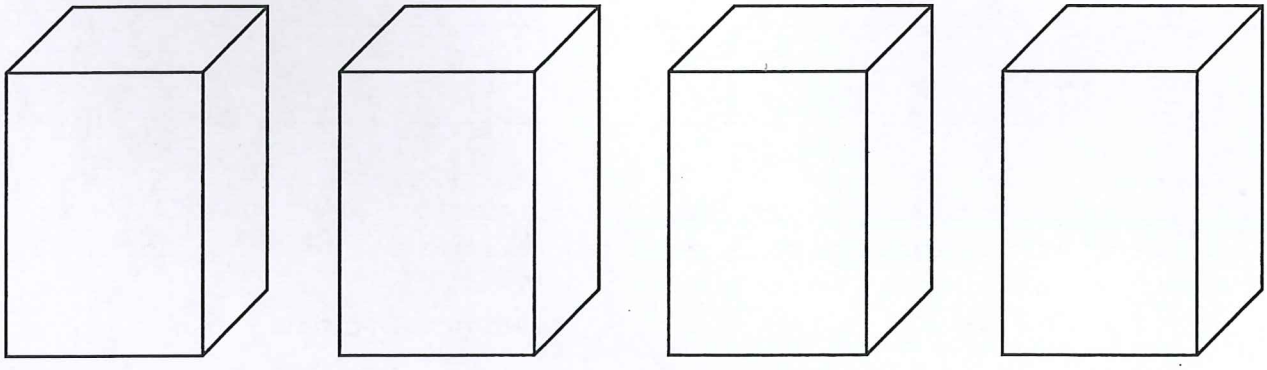
The volume of this prism is _____.

Name _____ Date _____

Use these rectangular prisms to record the layers that you count.







rectangular prism recording sheet