

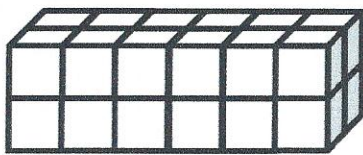
Name _____

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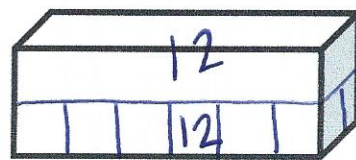
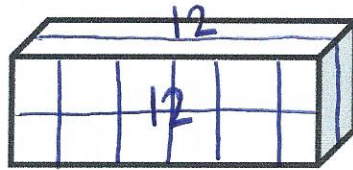
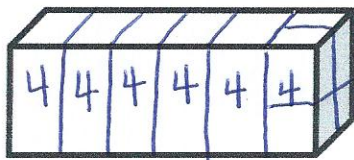
1. Use the prisms to find the volume.

- 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.

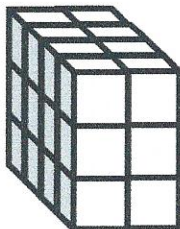
a.



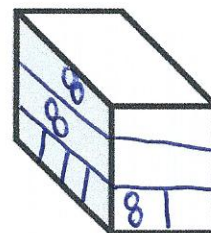
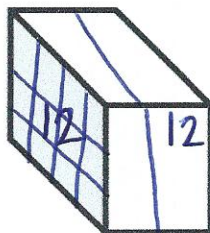
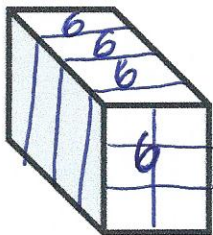
Number of Layers	Number of Cubes in Each Layer	Volume of the Prism
6	4	24 cubic cm
2	12	24 cubic cm
2	12	24 cubic cm



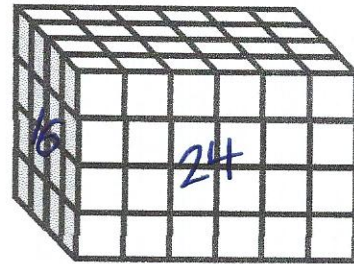
b.



Number of Layers	Number of Cubes in Each Layer	Volume of the Prism
4	6	24 cubic cm
2	12	24 cubic cm
3	8	24 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.



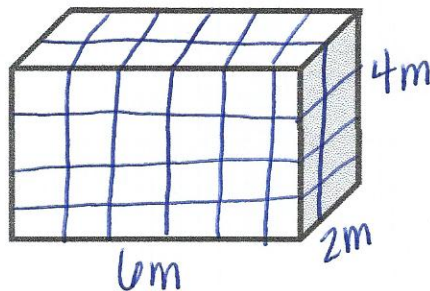
Jonah is right. Each layer has 6 across & 4 deep for 24 cubes in a layer. There are 4 layers, so $24 \times 4 = 96$ cubes total.

Josh sees the 16 cubes on the side layer, but that would be layers across, not 4.

3. Marcos makes a prism $\overbrace{1 \text{ inch by } 5 \text{ inches}}^{25 \text{ in}^3}$ 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	50 in^3	Each layer is 25 in^3 , so $25 \times 2 = 50 \text{ in}^3$.
4	100 in^3	$25 \times 4 = 100 \text{ in}^3$
7	175 in^3	$25 \times 7 = 175 \text{ in}^3$

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 4 layers from bottom to top.

Each layer contains 12 cubic units.

The volume of this prism is 48 m^3 .