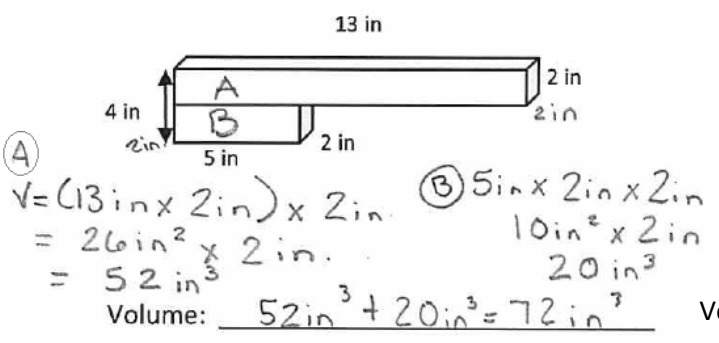
Name _____ Date _____

1. Find the total volume of the figures, and record your solution strategy.

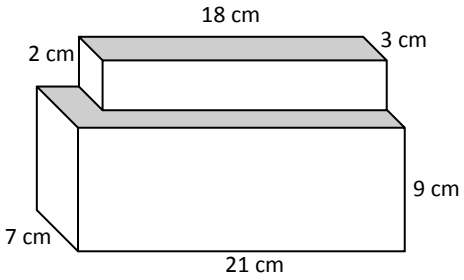
a.



Solution Strategy:

The 4 is equal to combined height. 2 is the height of the bottom prism. I figured out the volume of each prism then combined the totals.

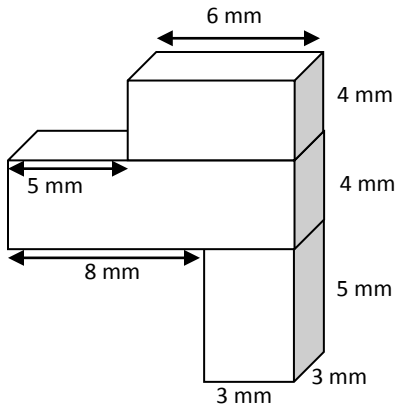
b.



Volume: _____

Solution Strategy:

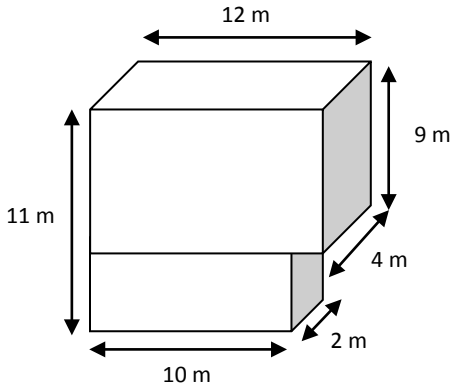
c.



Volume: _____

Solution Strategy:

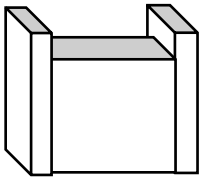
d.



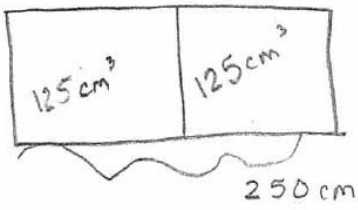
Volume: _____

Solution Strategy:

2. A planting box (pictured below) is made of two sizes of rectangular prisms. One type of prism measures 3 inches by 6 inches by 14 inches. The other type measures 15 inches by 5 inches by 10 inches. What is the total volume of three such boxes?



3. The combined volume of two identical cubes is 250 cubic centimeters. What is the measure of one cube's edge?

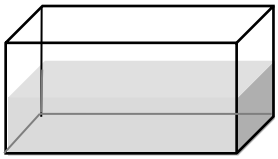


$V = 5\text{cm} \times 5\text{cm} \times 5\text{cm}$

$= 125\ \text{cm}^3$

The measure of one cube's edge is 5 cm.

4. A fish tank has a base area of 45 cm^2 and is filled with water to a depth of 12 cm. If the height of the tank is 25 cm, how much more water will be needed to fill the tank to the brim?



5. Three rectangular prisms have a combined volume of 518 cubic feet. Prism A has one-third the volume of Prism B, and Prisms B and C have equal volume. What is the volume of each prism?

Name _____ Date _____

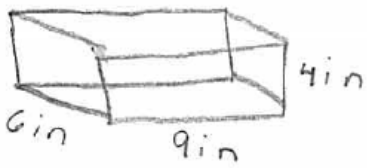
Wren makes some rectangular display boxes.

1. Wren's first display box is 6 inches long, 9 inches wide, and 4 inches high. What is the volume of the display box? Explain your work using a diagram.

$V = (6\text{in} \times 9\text{in}) \times 4\text{in}$

$= 54\text{in}^2 \times 4\text{in}$

$= 216\text{in}^3$



2. Wren wants to put some artwork into three shadow boxes. She knows they all need a volume of 60 cubic inches, but she wants them all to be different. Show three different ways Wren can make these boxes by drawing diagrams and labeling the measurements.

Shadow Box A	Shadow Box B
Shadow Box C	

Answers will vary!

3. Wren wants to build a box to organize her scrapbook supplies. She has a stencil set that is 12 inches wide that needs to lay flat in the bottom of the box. The supply box must also be no taller than 2 feet. Name one way she could build a supply box with a volume of 72 cubic inches.

$$V = (3 \text{ in} \times 12 \text{ in}) \times 2 \text{ in}$$
$$= 36 \text{ in}^2 \times 2 \text{ in}$$
$$= 72 \text{ in}^3$$

Length = 3 in
Width = 12 in
Height = 2 ft

4. After all of this organizing, Wren decides she also needs more storage for her soccer equipment. Her current storage box measures 1 foot long by 2 feet wide by 2 feet high. She realizes she needs to replace it with a box with 12 cubic feet of storage, so she doubles the width.

   a. Will she achieve her goal if she does this? Why or why not?

   b. If she wants to keep the height the same, what could the other dimensions be for a 12-cubic-foot storage box?

   c. If she uses the dimensions in Part (b), what is the area of the new storage box's floor?

   d. How has the area of the bottom in her new storage box changed? Explain how you know.