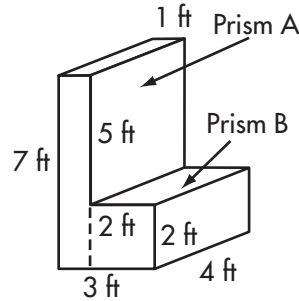# Combining Volumes

To find the volume of a solid made up of familiar parts, find the volume of each part and add the volumes.

Step 1: To find the volume of the figure at the right, separate the solid into two rectangular prisms. (See the dotted line in the figure.)

1 ft Prism A

5 ft

7 ft

Prism B

2 ft 2 ft

3 ft 4 ft

Step 2: Use the formula $V = \ell \times w \times h$ to find the volume of each prism.
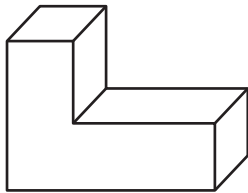
Volume of Prism A

$V = 1 \times 4 \times 7 = 28$ ft^3

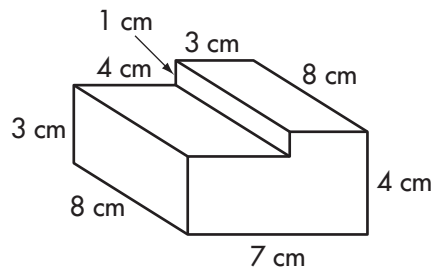**Volume of Prism B**

$V = 2 \times 4 \times 2 = 16$ ft^3

Step 3: Add the volumes of each prism.

The volume of the solid is $28 + 16 = 44$ ft^3.

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1. Show two ways of dividing the given solid into two rectangular solids.

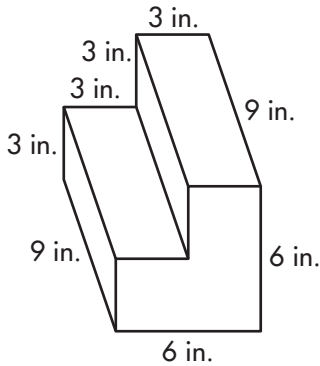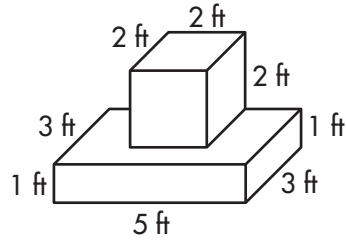2. Find the volume of the rectangular solid shown below. Show your work.

1 cm
3 cm
4 cm
8 cm
3 cm
4 cm
8 cm
7 cm

_____

_____

Combining Volumes

For **1** through **4**, find the volume of each solid figure.

1.

3 in.
3 in.
3 in.
9 in.
3 in.
9 in.
6 in.
6 in.

2.

2 ft
2 ft
2 ft
2 ft
3 ft
1 ft
1 ft
3 ft
5 ft

3.

3 cm
4 cm
10 cm
7 cm
2 cm
6 cm
10 cm
10 cm

4.

5 in.
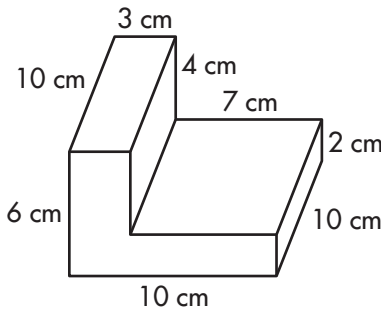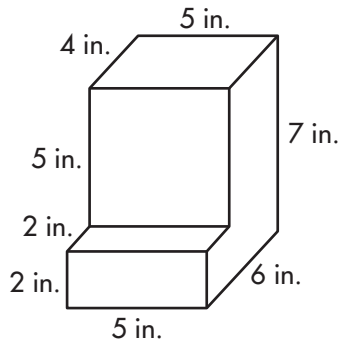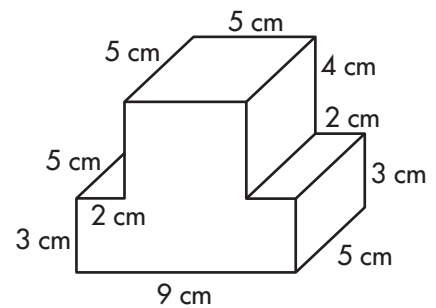4 in.
7 in.
5 in.
2 in.
2 in.
6 in.
5 in.

5. Paul wants to build this model with clay, but he does not know how many cubic centimeters of clay to purchase. How much clay should he purchase?

5 cm
5 cm
4 cm
2 cm
5 cm
3 cm
2 cm
2 cm
3 cm
5 cm
9 cm

A 235 cm³   **C** 405 cm³

B 335 cm³   **D** 935 cm³

6. Ashley is stacking two boxes on a shelf. The bottom box measures 6 inches × 5 inches × 5 inches. The top box is a cube with one edge measuring 4 inches. What is the volume of this stack? Explain how you found your answer.

_____

_____