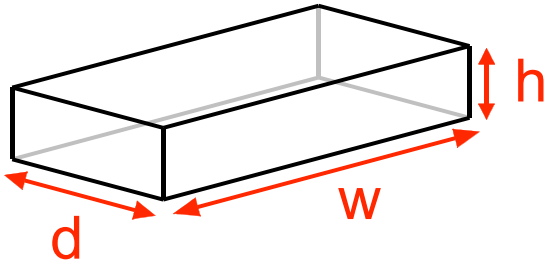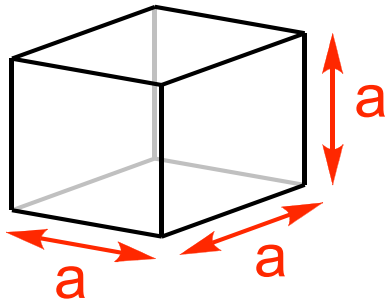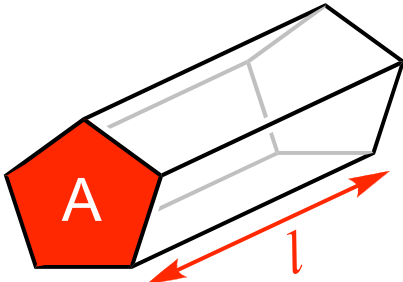# Volume

What's volume?

Volume is an amount of 3D space. The volume of a solid is how much three-dimensional space it occupies.

Calculating the volume of simple shapes

You can work out the volume of simple shapes using formulae.

The only one you have to know off by heart is the formula for the volume of a cuboid.

| Shape	Diagram	Area
Cuboid		volume = height × width × depth $$V_{cuboid} = hwd$$
Cube		volume = height × width × depth $$A_{cube} = a^3$$
Prism		volume = cross-sectional area × length $$V_{prism} = Al$$

Calculating the volume of complicated solids

The best and easiest method for finding the volume of a complicated solid is to split it up into several simple solids, find the volume of each simple solid, and add them together.

9 cm

10 cm

1.5 cm

4 cm

4 cm
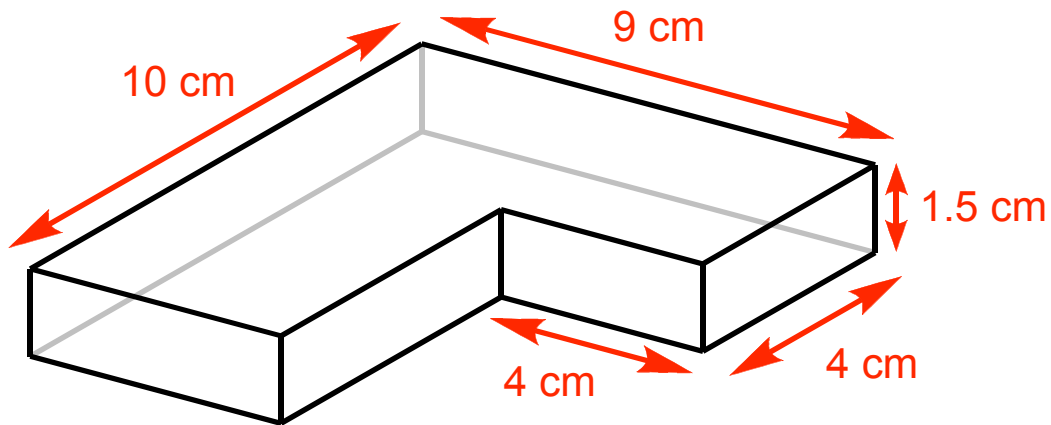
To find the volume of the solid above, split it into two cuboids:

=   +

9 cm

1.5 cm

4 cm

1.5 cm

5 cm

6 cm
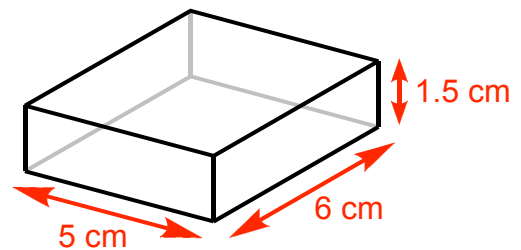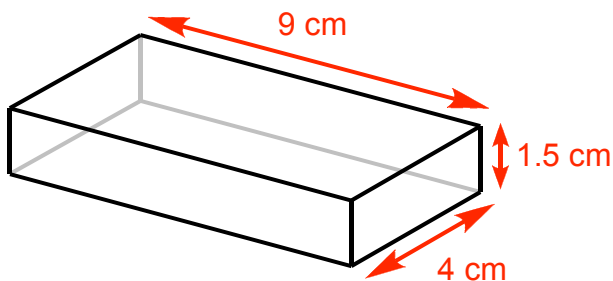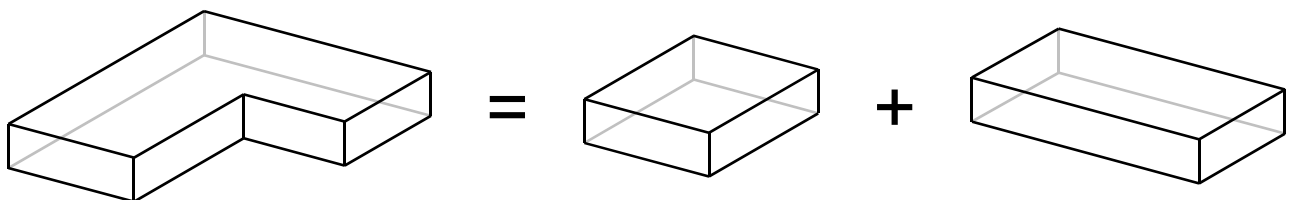
$$V_{\text{L-shaped box}} = V_{\text{large cuboid}} + V_{\text{small cuboid}}$$

$$= \left(9 \times 4 \times 1.5\right) + \left(6 \times 5 \times 1.5\right)$$

$$= 54 + 45$$

$$= 99 \text{ cm}^3$$