Planner

Volume

- Calculating the volume of cuboids and of shapes made of cuboids
- Calculating the surface area of cuboids and of shapes made of cuboids
- Calculating the surface area and volume of prisms
- Converting between measures of volume such as mm^3 and cm^3

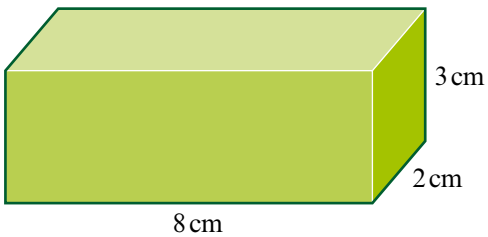
Keywords

You should know

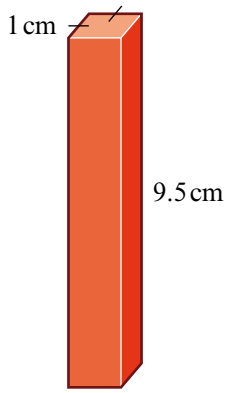
explanation 1a | explanation 1b | explanation 1c | explanation 1d | online

1 Calculate the volume of these cuboids.

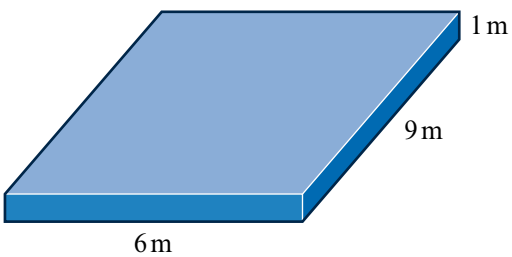
a



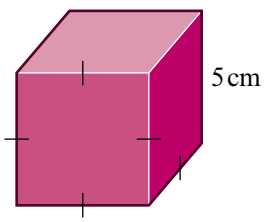
b



c



d

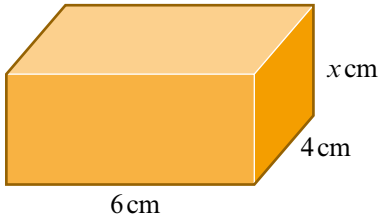


2 Calculate the total surface area of each cuboid in question **1**.

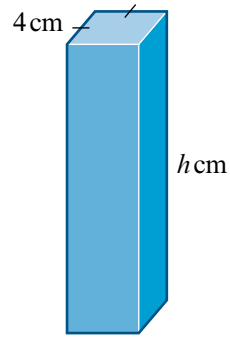
3 The volumes of these cuboids are given.

Calculate the lengths of the sides marked by letters.

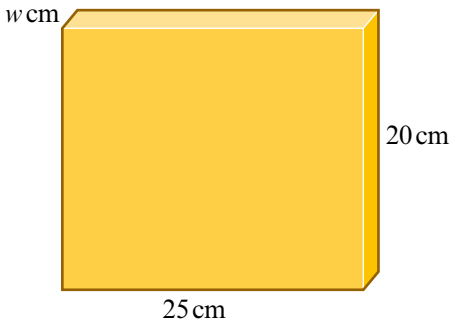
a Volume = 96 cm^3



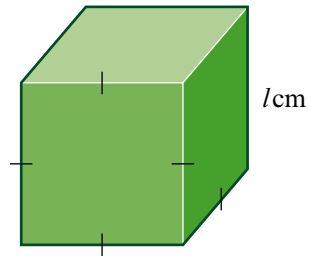
b Volume = 128 cm^3



c Volume = 100 cm^3

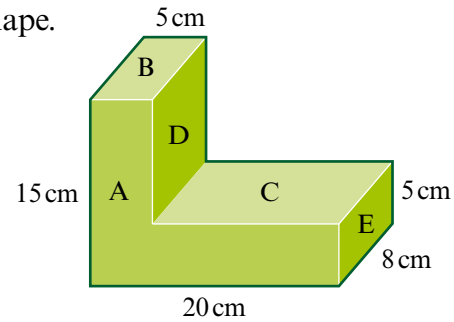


d Volume = 343 cm^3



4 Calculate the total surface area of each of the cuboids in question **3**.

5 Two cuboids are stuck together to make this shape.



a Calculate the volume of the shape.

b What is the area of face A?

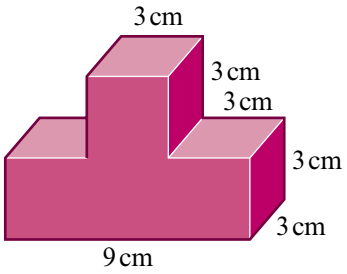
c Calculate the surface area of faces B, C, D and E.

d What is the total surface area of the shape?

6 Two cuboids are stuck together to make this shape.

a Calculate the volume of the shape.

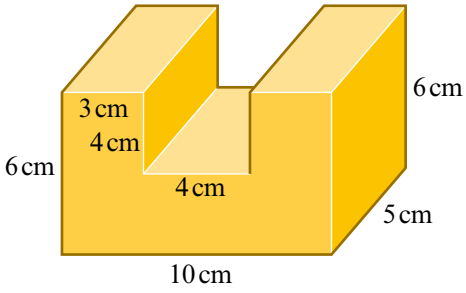
b Calculate the total surface area.



7 Three cuboids are stuck together to make this shape.

a Calculate the volume of the shape.

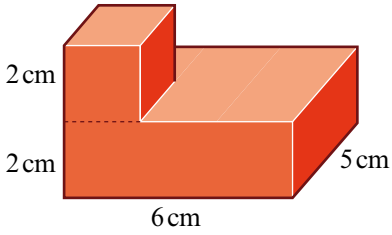
b Calculate the total surface area.



8 A cube of edge length 2 cm is placed on top of a cuboid.

a What is the volume of the combined shape?

b Calculate the total surface area of the shape.



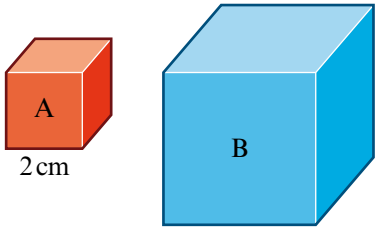
9 Cube A has edge length 2 cm.
The edges of cube B are twice as long as those of cube A.

a Calculate the volume of cube A.

b What is the total surface area of cube A?

c How many times bigger is the volume of B compared to the volume of A?

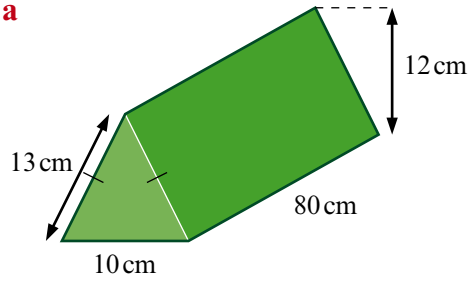
d How many times bigger is the surface area of B compared to the surface area of A?



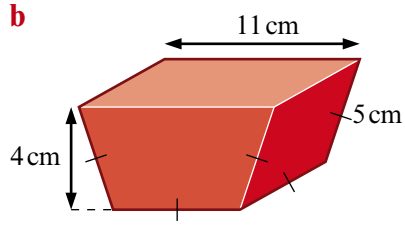
explanation 2 online

10 Work out the volume and surface area of each prism.

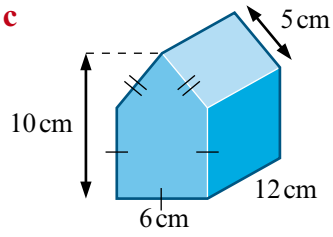
a



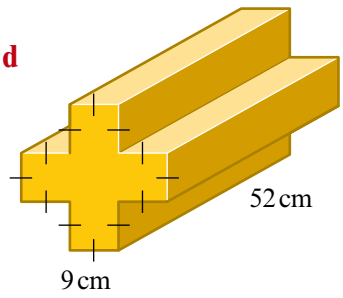
b



c



d



explanation 3

11 Measure the size of your textbook.

a What is its volume in cubic centimetres (cm^3)?

b What is its volume in cubic millimetres (mm^3)?

12 Convert these volumes to cubic millimetres.

a $15\,cm^3$ **b** $2.5\,cm^3$ **c** $580\,cm^3$ **d** $0.038\,cm^3$

13 Convert these volumes to cubic centimetres.

a $25\,000\,mm^3$ **b** $6700\,mm^3$ **c** $37\,mm^3$ **d** $456.78\,mm^3$

14 1 cubic metre = $1\,m^3 = 1\,000\,000\,cm^3$

a Estimate the volume of your classroom in cubic metres.

b Convert your answer to cubic centimetres.

c How many cubic millimetres is this?

d A Multilink cube has a side of 2 cm. How many of these cubes could you fit into your classroom?