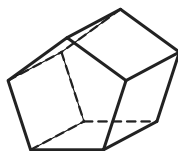


1 Faces, edges and vertices

This solid is a pentagonal prism.

- a) How many faces, edges and vertices does it have?
b) A pyramid has 7 faces. How many edges does it have?

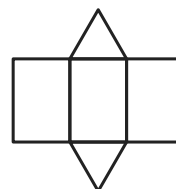


a) 7 faces, 15 edges, 10 vertices
b) the base has $7 - 1 = 6$ sides
 $6 + 6 = 12$ edges

2 Faces, edges and vertices

This is the net of a solid.

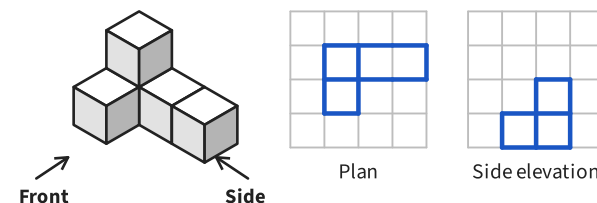
- a) Write down the name of the solid.
b) How many edges does the solid have?



a) 3 rectangles and 2 triangles
a triangular prism
b) $3 + 3 + 3 = 9$ edges

3 Plans and elevations

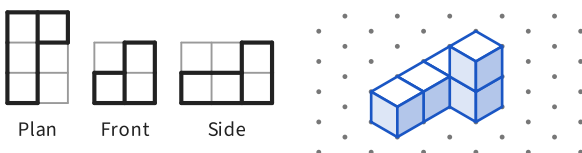
The solid is made from 5 cubes. On the grids, draw a) the plan and b) the side elevation.



a) and b) drawn on the grids

4 Plans and elevations: drawing the solid

- a) Here are three views of a solid made from cubes. How many cubes make the solid?
b) Draw the solid on the isometric paper.



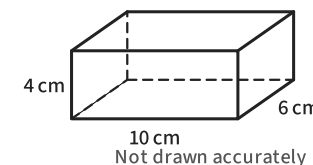
a) 5 cubes b) drawn above

Three dimensional shapes revision mat answers

Foundation A

5 Volume of prisms

- a) Work out the volume of this box.
b) How many cubes of side 2 cm will fit inside the box?

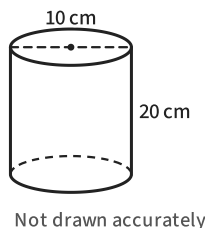


a) $10 \times 6 \times 4 = 240 \text{ cm}^3$
b) $5 \times 3 \times 2 = 30$ cubes

6 Volume of prisms

A tin is a cylinder.

- a) Work out its volume. Give your answer to 1 decimal place.
b) 1 litre = 1000 cm^3 . Will 1.5 litres of soup fit in the tin? Give a reason.

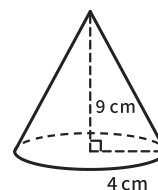


a) $\pi \times 5^2 \times 20 = 1570.8 \text{ cm}^3$
b) 1.5 litres = 1500 cm^3
Yes: 1500 is less than 1570.8

7 Volume of cones, spheres and pyramids

Cone: $V = \frac{1}{3} \pi r^2 h$ Sphere: $V = \frac{4}{3} \pi r^3$

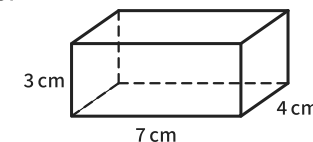
- a) Work out the volume of this cone. Give your answer to 1 decimal place.
b) A sphere has a radius of 3 cm. Work out its volume. Give your answer in terms of π .



a) $\frac{1}{3} \times \pi \times 4^2 \times 9 = 150.8 \text{ cm}^3$
b) $\frac{4}{3} \times \pi \times 3^3 = 36\pi \text{ cm}^3$

8 Surface area of cuboids

- a) Work out the surface area of this cuboid.
b) The cuboid is a box with no lid. The open top is 7 cm by 4 cm. How much card is needed to make it?



a) $2 \times 28 + 2 \times 21 + 2 \times 12 = 122 \text{ cm}^2$
b) $122 - 28 = 94 \text{ cm}^2$