

1 Faces, edges and vertices

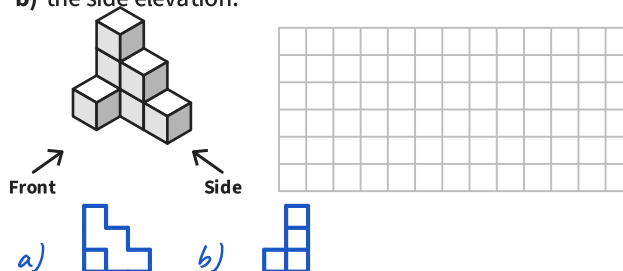
- a) A pyramid has 30 edges. How many faces and how many vertices does it have?
 b) A prism and a pyramid both have 9 faces. How many more edges does the prism have?

a) base: $30 \div 2 = 15$ sides
 16 faces, 16 vertices
 b) prism: 7 sided ends, 21 edges
 pyramid: 8 sided base, 16 edges
 $21 - 16 = 5$ more

2 Plans and elevations

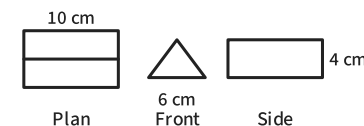
The solid is made from cubes. On the grid, draw

- a) the front elevation,
 b) the side elevation.



3 Plans and elevations: the solid

These are the plan, front elevation and side elevation of a solid.



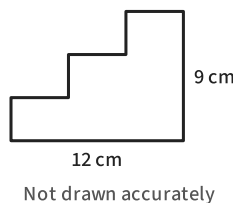
- a) Name the solid.
 b) Work out its volume.

a) a triangular prism
 b) $\frac{1}{2} \times 6 \times 4 = 12 \text{ cm}^2$ cross section
 $12 \times 10 = 120 \text{ cm}^3$

4 Perimeter of compound shapes

All the corners are right angles.
 The steps are not all given.

- a) Work out the perimeter of the shape.
 b) Explain why you do not need the length of each step.



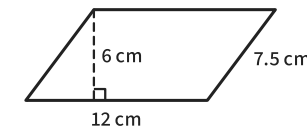
a) $12 + 9 + 12 + 9 = 42 \text{ cm}$
 b) the steps across add to 12 cm
and the steps up add to 9 cm

Area and volume 1

revision mat answers

5 Area of 2D shapes

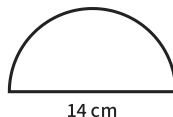
- a) Work out the area of the parallelogram.
 b) A triangle with a base of 9 cm has the same area. Work out its perpendicular height.



a) base $\times$ perpendicular height
 $12 \times 6 = 72 \text{ cm}^2$
 b) $2 \times 72 \div 9 = 16 \text{ cm}$

6 Circumference and area of a circle

- a) Work out the perimeter of this semicircle. Give your answer to 1 decimal place.
 b) A wheel with a diameter of 65 cm turns 400 times. How far does it go, in metres?

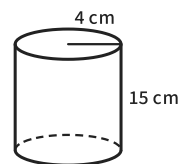


a) $\pi \times 14 \div 2 + 14 = 36.0 \text{ cm}$
 b) $400 \times \pi \times 65 = 81\,681 \text{ cm}$
 $= 816.8 \text{ m}$

7 Volume of prisms

This cylinder is full of water.

- a) Work out its volume to 1 decimal place.
 b) The water is poured into an empty cuboid tank with a base 20 cm by 12 cm. How deep is the water?



a) $\pi \times 4^2 \times 15 = 754.0 \text{ cm}^3$
 b) $754.0 \div (20 \times 12)$
 $= 3.14 \text{ cm}$

8 Surface area of cuboids

- a) A cuboid is 6 cm by 4 cm by h cm. Its surface area is 148 cm^2 . Find h .
 b) Box A is 8 cm by 2 cm by 2 cm. Box B is 4 cm by 4 cm by 2 cm. They hold the same amount. Which needs less card?

a) $48 + 20h = 148, h = 5$
 b) A: $2 \times (16 + 16 + 4) = 72 \text{ cm}^2$
B: $2 \times (16 + 8 + 8) = 64 \text{ cm}^2$, box B