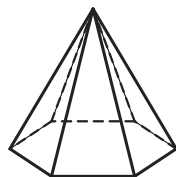


1 Faces, edges and vertices

This pyramid has a hexagon for its base.

- a) How many faces, edges and vertices does it have?
b) A prism has 24 edges. How many faces does it have?

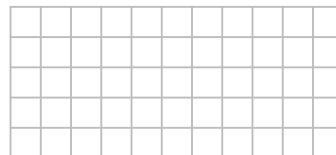
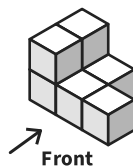


- a) 7 faces, 12 edges, 7 vertices
b) $24 \div 3 = 8$, an octagonal prism
 $8 + 2 = 10$ faces

2 Plans and elevations

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

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



3 Plans and elevations: the solid

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



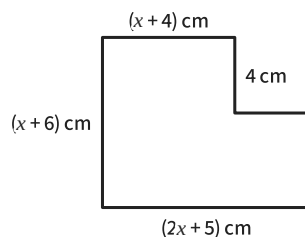
- a) How many cubes make the solid?
b) Work out its surface area.

- a) front: 4 squares, 2 deep: 8 cubes
b) $4 + 4 + 6 + 6 + 4 + 4 = 28 \text{ cm}^2$

4 Perimeter of compound shapes

All the corners are right angles.

- a) Work out the perimeter when $x = 3$.
b) The perimeter is 64 cm. Find x .



- a) $11 + 9 + 7 + 4 + 4 + 5 = 40 \text{ cm}$
b) $6x + 22 = 64$, $x = 7$

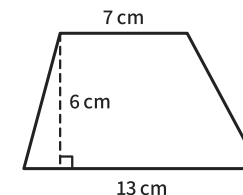
Area and volume 1

revision mat answers

Higher A

5 Area of 2D shapes

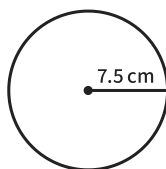
- a) Work out the area of the trapezium.
b) A triangle has the same area. Its base is 15 cm. Work out its perpendicular height.



- a) $(7 + 13) \div 2 \times 6 = 60 \text{ cm}^2$
b) $2 \times 60 \div 15 = 8 \text{ cm}$

6 Circumference and area of a circle

- a) Work out the area of this circle. Give your answer to 1 decimal place.
b) A round rug has a circumference of 5.2 m. Work out its area to 3 significant figures.

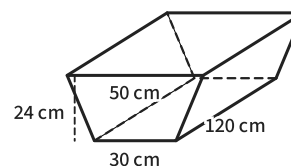


- a) $\pi \times 7.5^2 = 176.7 \text{ cm}^2$
b) $r = 5.2 \div 2\pi = 0.8276 \text{ m}$
 $\pi \times 0.8276^2 = 2.15 \text{ m}^2$

7 Volume of prisms

A trough is a prism. Its cross section is a trapezium.

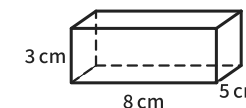
- a) Work out its volume.
b) It is filled with water at 8 litres a minute. How long does it take to fill?



- a) $(50 + 30) \div 2 \times 24 \times 120 = 115\,200 \text{ cm}^3$
b) $115\,200 \text{ cm}^3 = 115.2 \text{ litres}$
 $115.2 \div 8 = 14.4 \text{ min} = 14 \text{ min } 24 \text{ s}$

8 Surface area of cuboids

- a) Work out the surface area of this cuboid.
b) A cube has a surface area of 294 cm^2 . Work out its volume.



- a) $2 \times (40 + 24 + 15) = 158 \text{ cm}^2$
b) $294 \div 6 = 49$, side = 7 cm
 $7^3 = 343 \text{ cm}^3$