



- 1 A net folds to make a triangular prism.
How many triangles and how many rectangles are in the net?

(2 marks)

2 triangular ends

3 rectangular sides

2 triangles, 3 rectangles

- 2 A net is made from one square and four identical triangles.
Write down the name of the solid it folds to make.

(2 marks)

1 square (base)

4 triangles (sides)

Square-based pyramid

- 3 a. Write down the number of faces of a cube.
b. Write down the number of vertices of a cube.

(2 marks)

A face is a flat surface of the cube. An edge is where two faces meet, and a vertex is a corner where edges meet. Count the hidden faces and corners too

A cube has 6 square faces

A cube has 8 vertices, one at each corner

- 4 A net is made from two circles and one rectangle.
Write down the name of the solid it folds to make.

(2 marks)

2 circles = ends

1 rectangle = curved side

Cylinder

5 A 3D solid has exactly one square face and four triangular faces.

a. Write down the mathematical name of this solid.

b. Write down the number of edges of this solid.

(2 marks)

One square face and four triangular faces describes a square-based pyramid

It has 4 edges around the square base and 4 sloping edges up to the apex, so $4 + 4 = 8$ edges

6 A cube has sides of length 4 cm.

Work out the total area of the net of the cube.

(2 marks)

1 face: $4 \times 4 = 16$

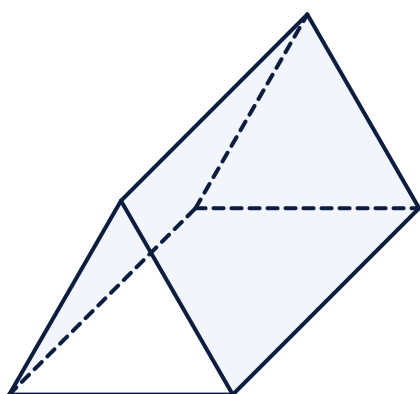
6 faces: $6 \times 16 = 96$

96 cm^2

7 Here is a triangular prism.

a. Write down the number of faces of a triangular prism.

b. Write down the number of edges of a triangular prism.



(2 marks)

A triangular prism has 2 triangular faces and 3 rectangular faces, so 5 faces in total

It has 3 edges on each triangular end and 3 edges joining the two ends, so $3 + 3 + 3 = 9$ edges

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Sam draws a net made of 5 identical squares and says it will fold to make a cube.

Is Sam right? Give a reason.

(2 marks)

Cube has 6 faces

Net has only 5 squares

No - a cube needs 6 squares

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a. A 3D solid has one curved surface, no edges and no vertices. Write down the mathematical name of this solid.

b. A different 3D solid has two flat circular faces and one curved surface. Write down the mathematical name of this solid.

(2 marks)

A single curved surface with no edges or vertices is a sphere

Two flat circular faces joined by a curved surface is a cylinder

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A cuboid measures 5 cm by 3 cm by 2 cm.

Work out the total area of the net of the cuboid.

(3 marks)

Top and bottom: $2 \times (5 \times 3) = 30$

Front and back: $2 \times (5 \times 2) = 20$

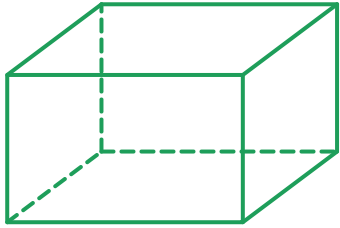
Two ends: $2 \times (3 \times 2) = 12$

$30 + 20 + 12 = 62$

62 cm^2

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- a. A 3D solid has exactly one circular face and one vertex. Write down the mathematical name of this solid.
- b. In the space below, draw a sketch of a cuboid.



(2 marks)

One circular face and one vertex (the apex) describes a cone

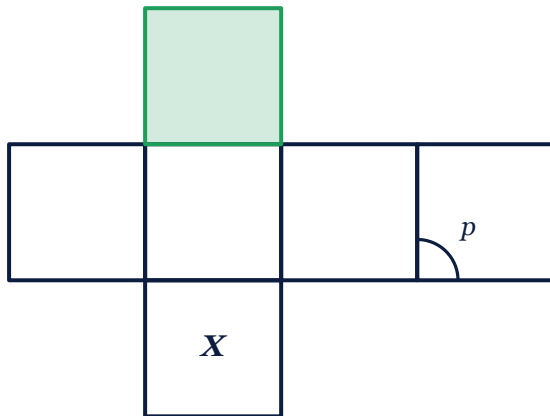
A cuboid sketch should show a box shape with 6 rectangular faces, usually drawn with hidden edges dashed

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The diagram shows the net of a cube. It is made from 6 identical squares.

The net is folded to make the cube.

- The face marked X is the bottom of the cube. Shade the face that is the top of the cube.
- Write down the size of angle p .
- Write down the number of edges of the cube.



(3 marks)

a) X is below the row, so the face opposite is above the row

Shade the square above the row

b) Every face is a square

$$p = 90^\circ$$

c) 4 edges on the top, 4 on the bottom, 4 joining them

$$4 + 4 + 4 = 12$$

a) square above the row b) 90° c) 12

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A prism has 9 edges.

- What shape is the cross-section of the prism?
- How many faces does the prism have?

(3 marks)

a)

Edges = $3 \times$ (sides of end)

$$9 \div 3 = 3 \text{ sides}$$

Triangle

b)

$$2 \text{ ends} + 3 \text{ rectangles} = 5$$

5

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A prism has a cross-section that is a pentagon.

- Write down the number of faces of the prism.
- Write down the number of edges of the prism.
- Write down the number of vertices of the prism.

(3 marks)

A pentagonal prism has 2 pentagonal faces and 5 rectangular faces, so 7 faces

Each pentagonal end has 5 edges and there are 5 edges joining the ends, so $5 + 5 + 5 = 15$ edges

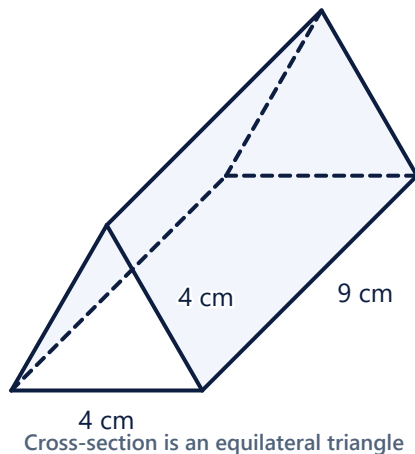
Each pentagonal end has 5 vertices, so $5 + 5 = 10$ vertices

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A prism has a cross-section that is an equilateral triangle with sides of length 4 cm.

The length of the prism is 9 cm.

Work out the total length of all the edges of the prism.



(3 marks)

The prism has 2 triangular ends, each with 3 edges of 4 cm

$$6 \times 4 = 24 \text{ cm}$$

It has 3 edges of length 9 cm joining the ends

$$3 \times 9 = 27 \text{ cm}$$

$$\text{Total edge length} = 24 + 27 = 51 \text{ cm}$$

51 cm

16

A prism has a cross-section that is a regular octagon with sides of length 3 cm.

The length of the prism is 10 cm.

- Write down the number of edges of the prism.
- Work out the total length of all the edges of the prism.

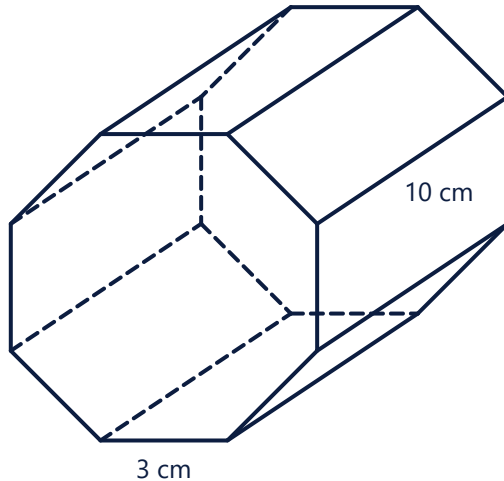


Diagram NOT accurately drawn

(3 marks)

An octagonal prism has 8 edges on each end and 8 edges joining the ends: $8 + 8 + 8 = 24$ edges

The two octagonal ends have 16 edges of 3 cm

$$16 \times 3 = 48 \text{ cm}$$

The 8 joining edges have length 10 cm

$$8 \times 10 = 80 \text{ cm}$$

$$\text{Total edge length} = 48 + 80 = 128 \text{ cm}$$

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The ends of a triangular prism are right-angled triangles with sides 3 cm, 4 cm and 5 cm.

The prism is 10 cm long.

Work out the total area of the net of the prism.

(3 marks)

$$\text{Triangles: } 2 \times \left(\frac{1}{2} \times 3 \times 4\right) = 12$$

$$\text{Rectangles: } 10 \times (3 + 4 + 5) = 120$$

$$12 + 120 = 132$$

$$132 \text{ cm}^2$$