

Nets of Prisms and Pyramids

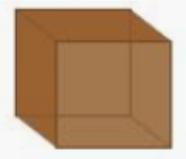
Starter

1. **(Review of last lesson)**
Find the surface area of cuboid whose dimensions are 4.5 cm by 7 cm by 5.2 cm.
2. **(Review of last lesson)** A cuboid has surface area 100 cm^2 . If two dimensions of the cuboid are 4 cm and 3 cm, find the third dimension. Give your answer to 3 s.f.

Work in pairs.

2. Look at the diagrams below. Classify the solids as prisms or pyramids

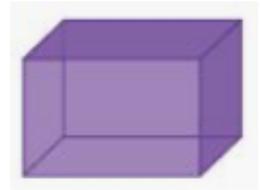
(a)



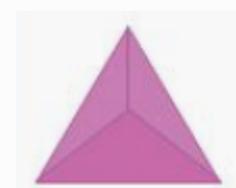
(b)



(c)



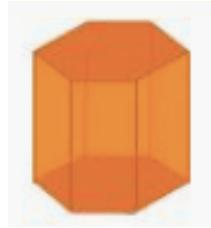
(d)



(e)



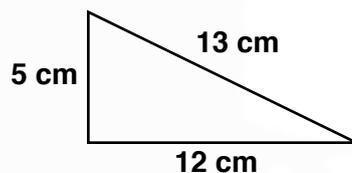
(f)



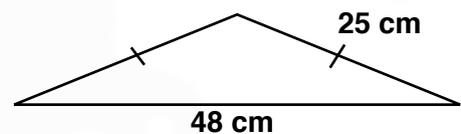
2. Explain the difference between a prism and a pyramid.

3. Find the area of the triangles.

(a)



(b)



Notes

Prisms vs pyramids

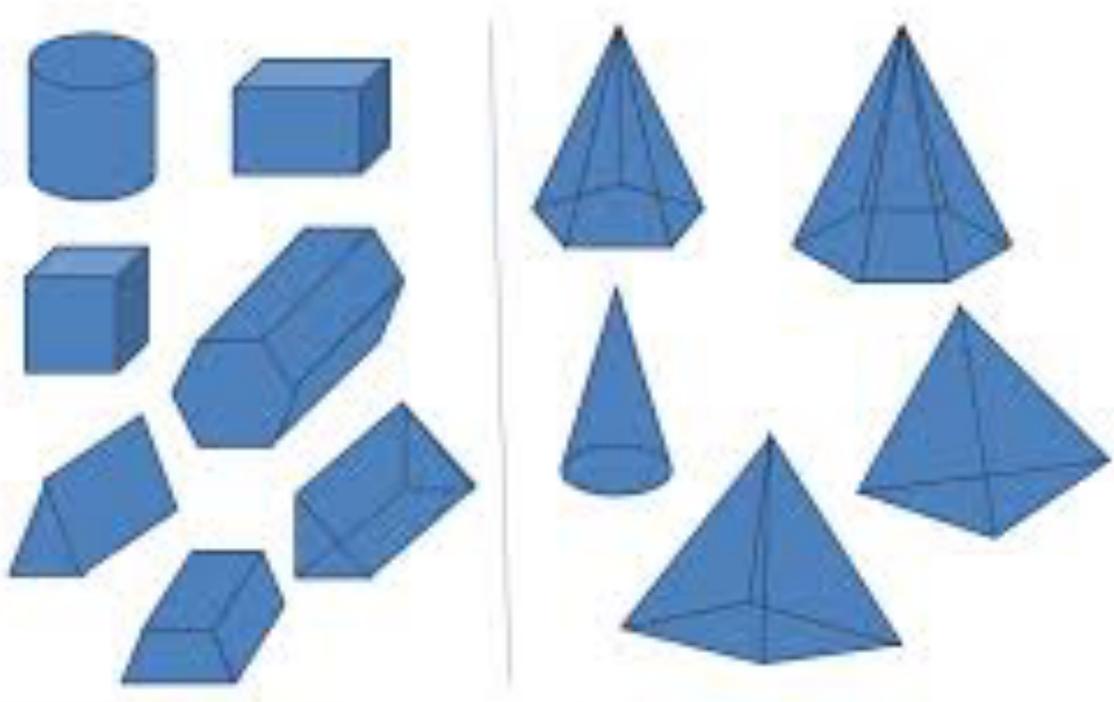
There is no need to draw the diagrams.

Prisms

- 3-dimensional solid
- The two end faces are the same shape
- The other faces are squares or rectangles, except for the cylinder

Pyramids

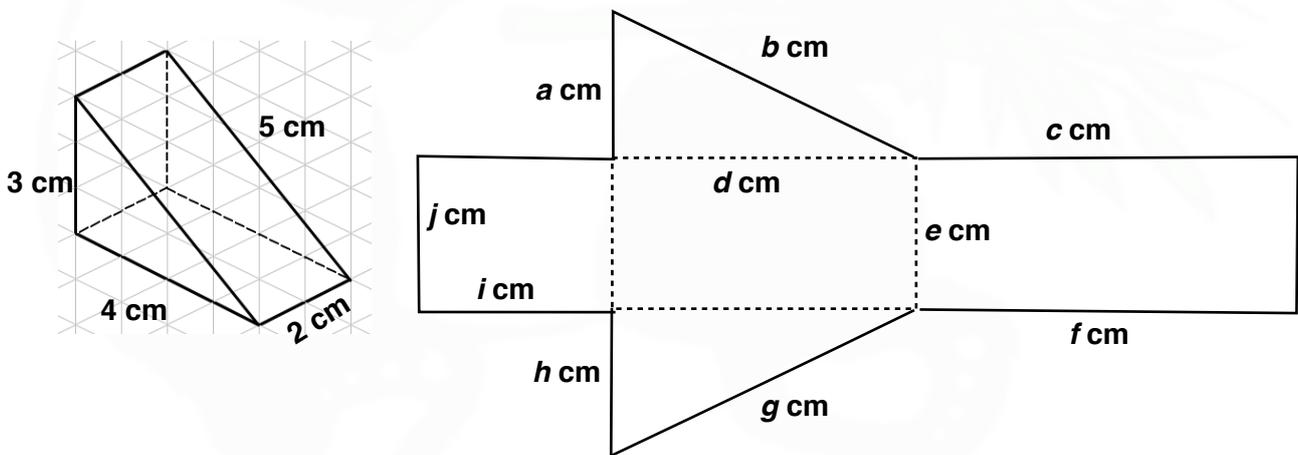
- 3-dimensional solid
- The base can be any shape
- The other faces are triangles, except for the cone
- The triangles meet at a point called the apex



Remember $\text{Area of a triangle} = \frac{\text{base} \times \text{perpendicular height}}{2}$

Nets of prisms

- E.g. 1** (a) Copy the net of the triangular prism and write in the lengths $a-j$.
 (b) Hence find the surface area of the triangular prism.



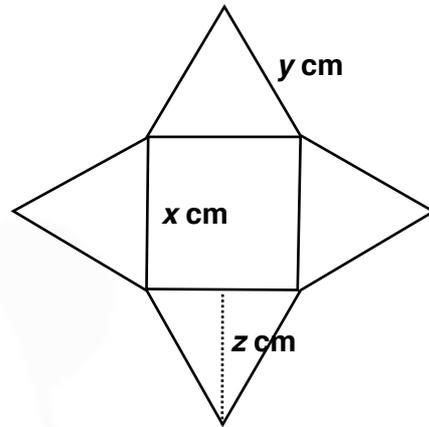
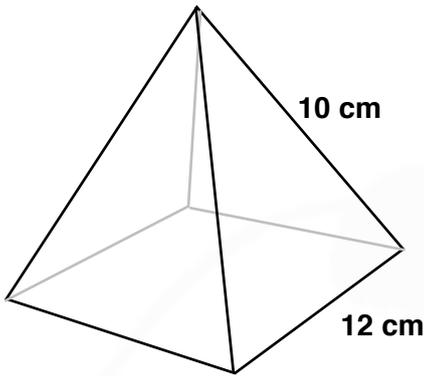
Working:

- (a) $a = 3$ $b = 5$ $c = 5$ $d = 4$ $e = 2$
 $f = 5$ $g = 5$ $h = 3$ $i = 3$ $j = 2$
- (b) 6 (triangle) + 6 (triangle) + 6 (vertical rectangle) + 10 (sloping rectangle) + 8 (base rectangle)
 Total = 36 cm^2

[Graphic of 2-D to 3-D prism and vice versa](#)

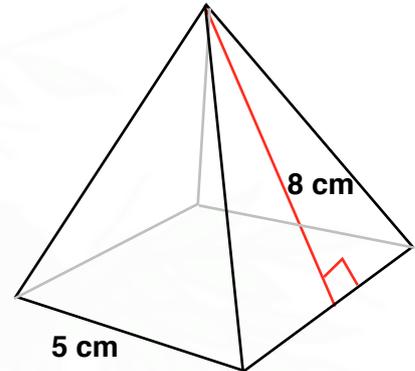
Nets of pyramids

- E.g. 2** (a) Copy the net of the square-based pyramid and write in the lengths x , y and z .
(b) Hence find the surface area of the triangular prism.



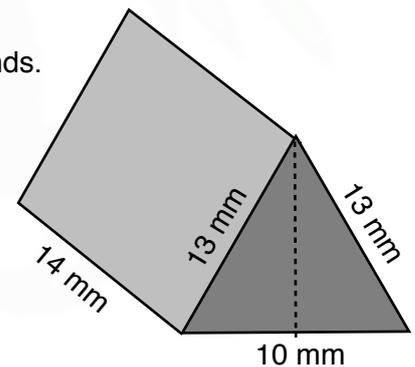
Graphic of 2-D to-3-D pyramid and vice versa

- E.g. 3** Calculate the area of the square-based pyramid.



- E.g. 4** Calculate the surface area of this prism

Hint: Let h be the perpendicular height of the triangular ends.



Video: [Surface area of prisms](#)
Video: [Surface area of L-shaped prism](#)

[Solutions to Starter and E.g.s](#)

Exercise

p112 Ex 6.5 Qu 1-9

Summary

Prisms: the two end faces are the same shape and the other faces are squares or rectangles, except for the cylinder.

Pyramids — the base can be any shape, the other faces are triangles, except for the cone.

[Textbook answers \(only available during a lockdown\)](#)

