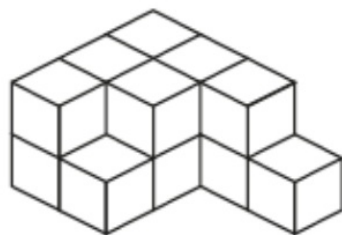


G28 3d Shapes Plans, Elevations and Sketching

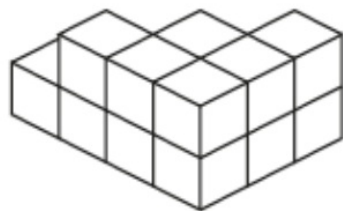
OCR

18 The diagram shows two views of a solid made from 14 one-centimetre cubes.

Created by



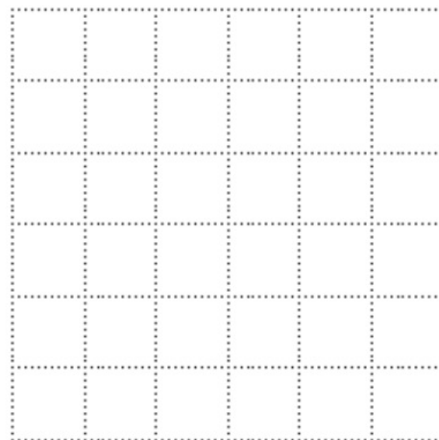
Front view



Rear view

Not to scale

(a) On the centimetre grid below, draw a plan of the solid.



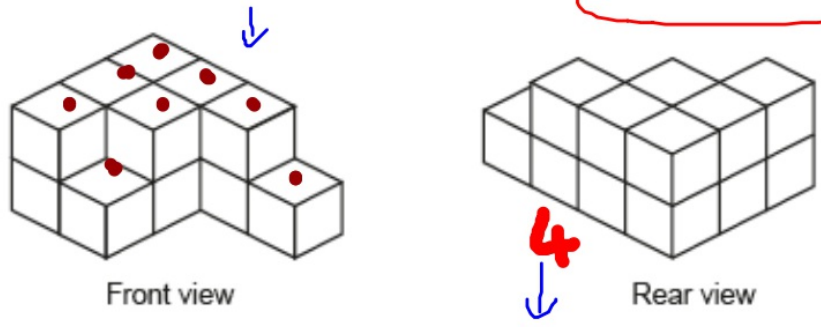
[2]

(b) Work out the **smallest** number of cubes that need to be added to the solid to make a cube.

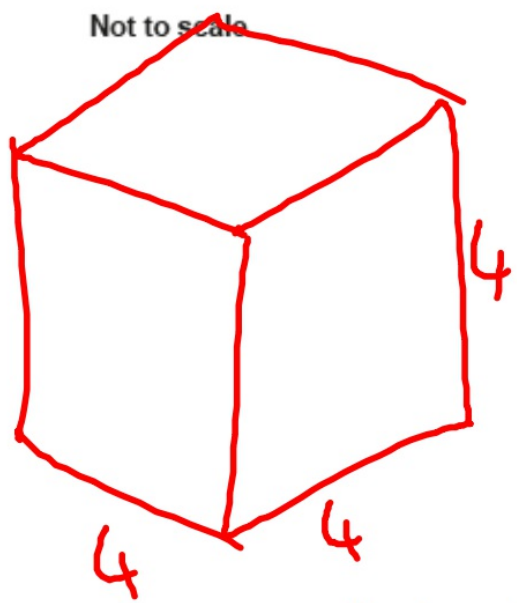
(b) [2]

18 The diagram shows two views of a solid made from 14 one-centimetre cubes.

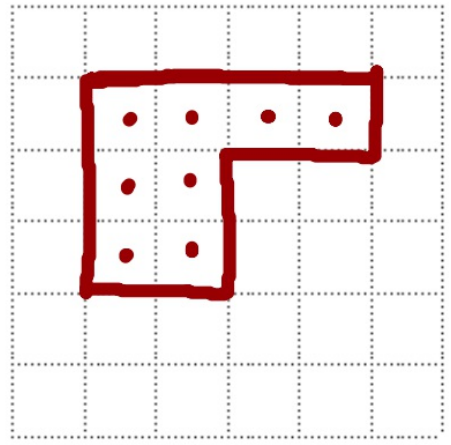
Created by



Not to scale



(a) On the centimetre grid below, draw a plan of the solid.



$4 \times 4 \times 4$
 [2] $= 64 \text{ cm}^3$

(b) Work out the **smallest** number of cubes that need to be added to the solid to make a cube.

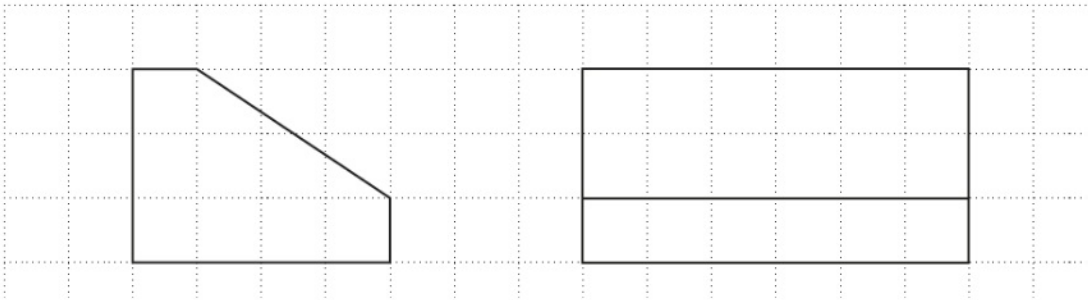
$64 - 14$

50

(b) [2]

13 The front and side elevations of a prism, with a pentagon as its cross section, are drawn on this one-centimetre square grid.

Video created by W Neill



(b) Calculate the volume of the prism.

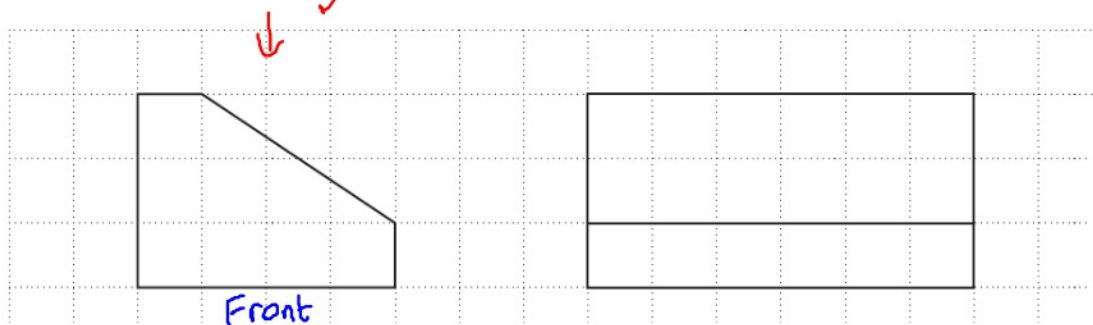
(a) Draw accurately the plan of the prism on the grid below.



(b)

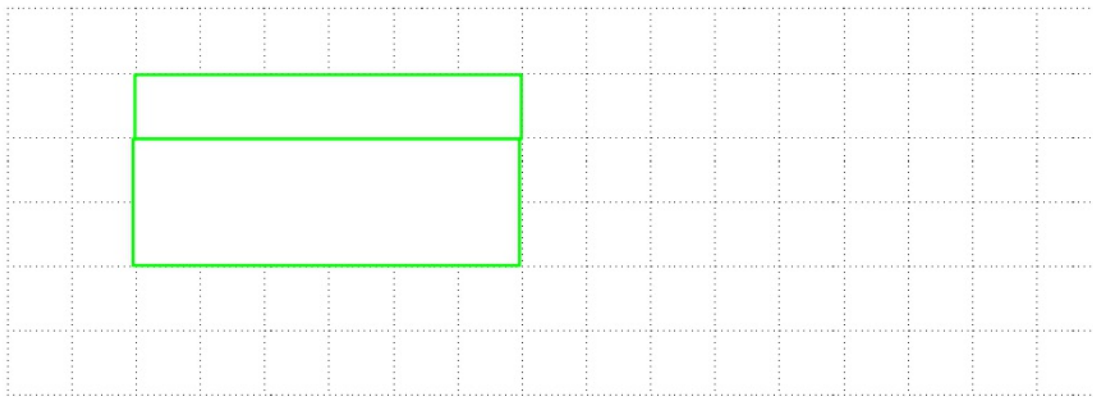
[2]

13 The front and side elevations of a prism, with a pentagon as its cross section, are drawn on this one-centimetre square grid.



Front

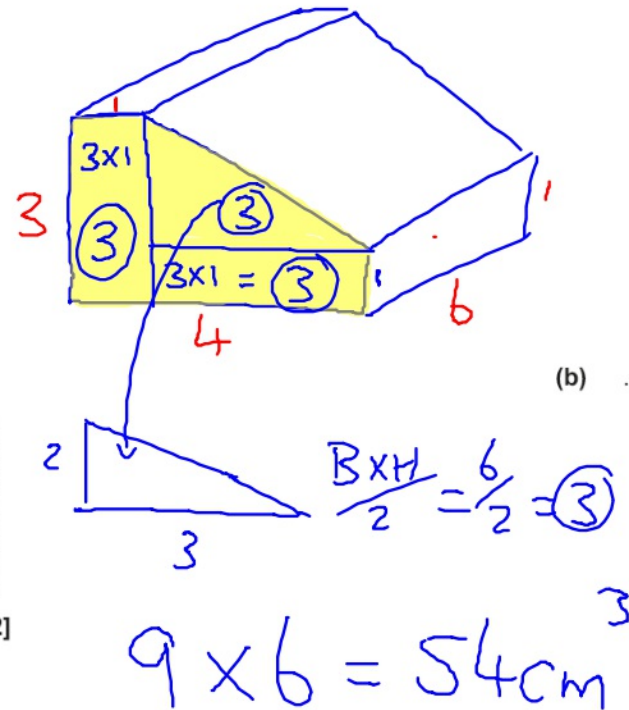
(a) Draw accurately the plan of the prism on the grid below.



[2]

Video creator

(b) Calculate the volume of the prism.

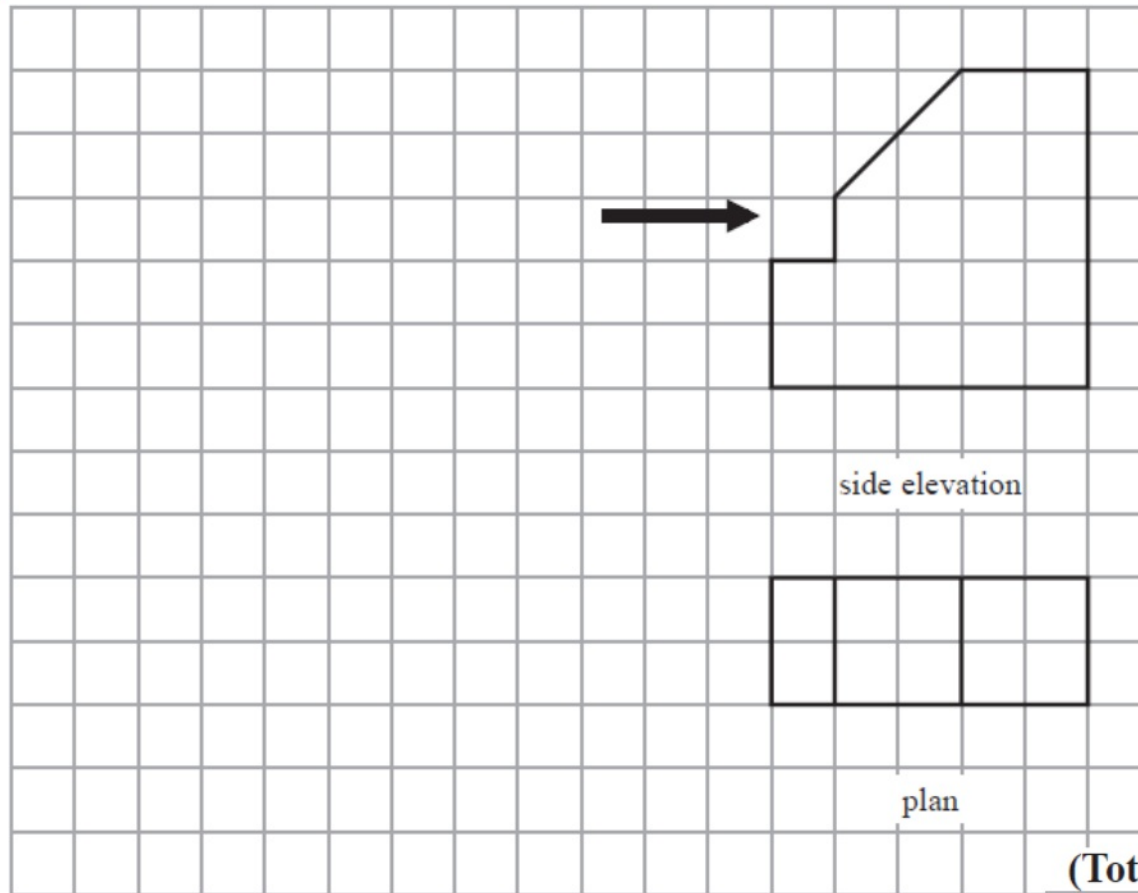


(b)

Edexcel

7 The plan and side elevation of a solid prism are shown on the grid.

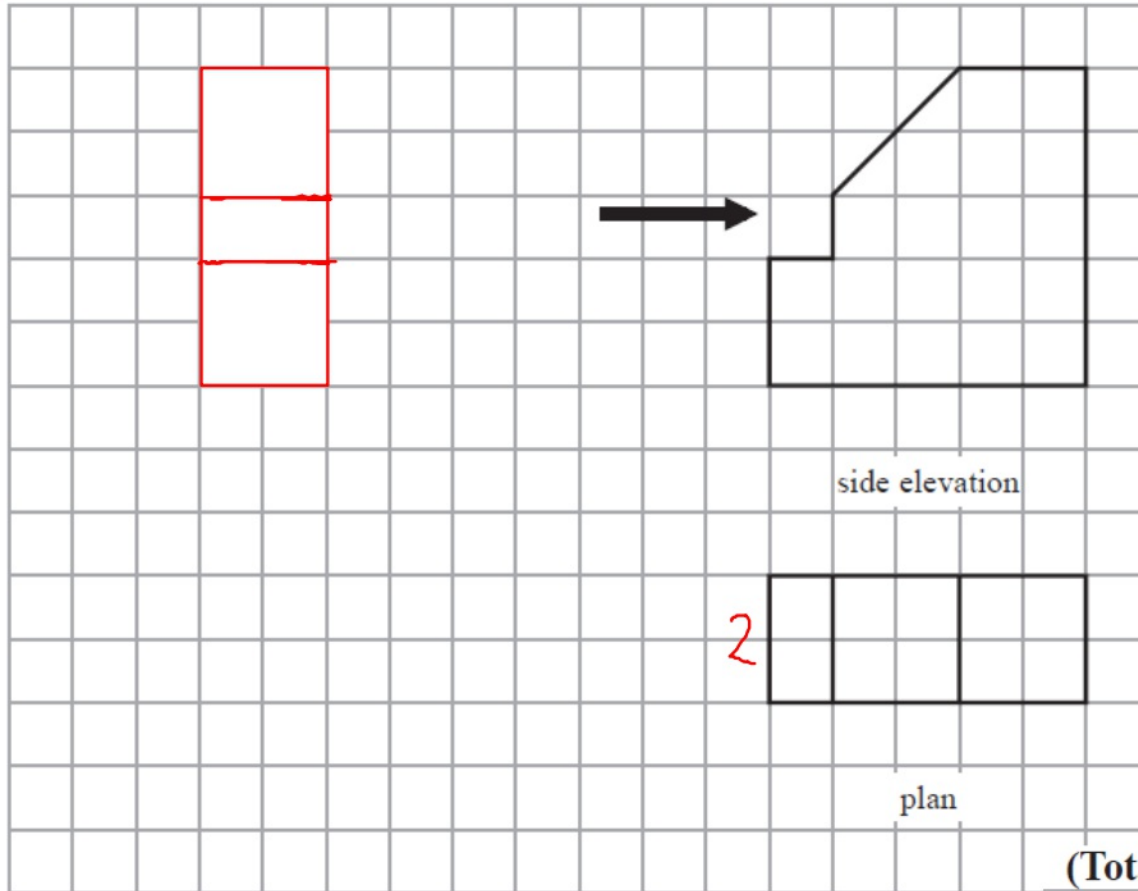
On the grid, draw the front elevation of the prism from the direction of the arrow.



(Total for Question is 2 marks)

The plan and side elevation of a solid prism are shown on the grid.

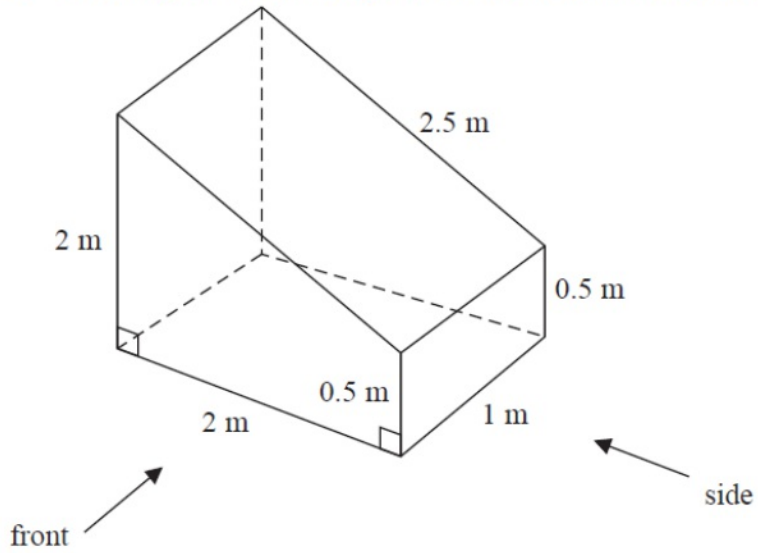
On the grid, draw the front elevation of the prism from the direction of the arrow.



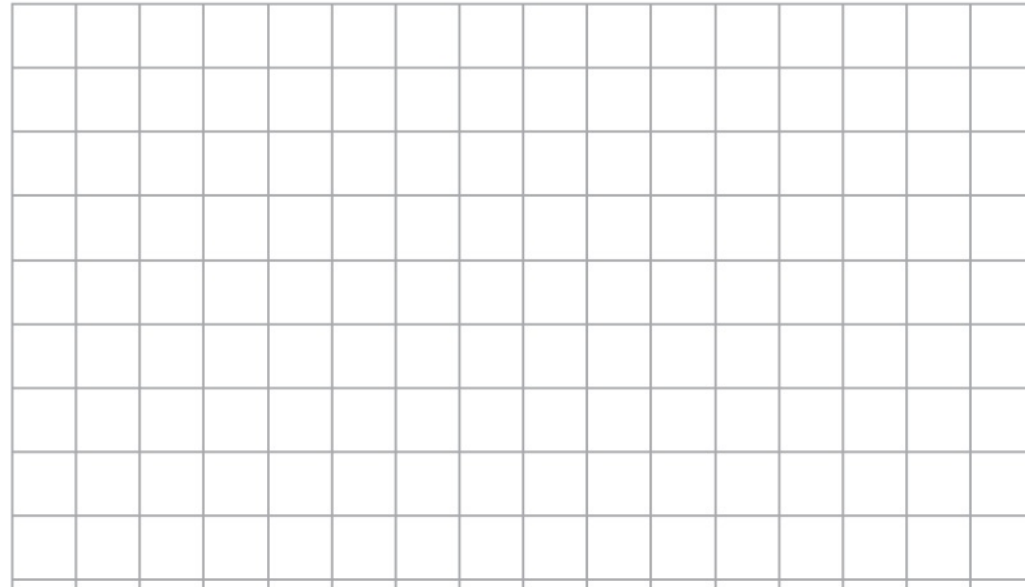
(Total for Question is 2 marks)

19 The diagram shows a prism with a cross section in the shape of a trapezium.

Video creator

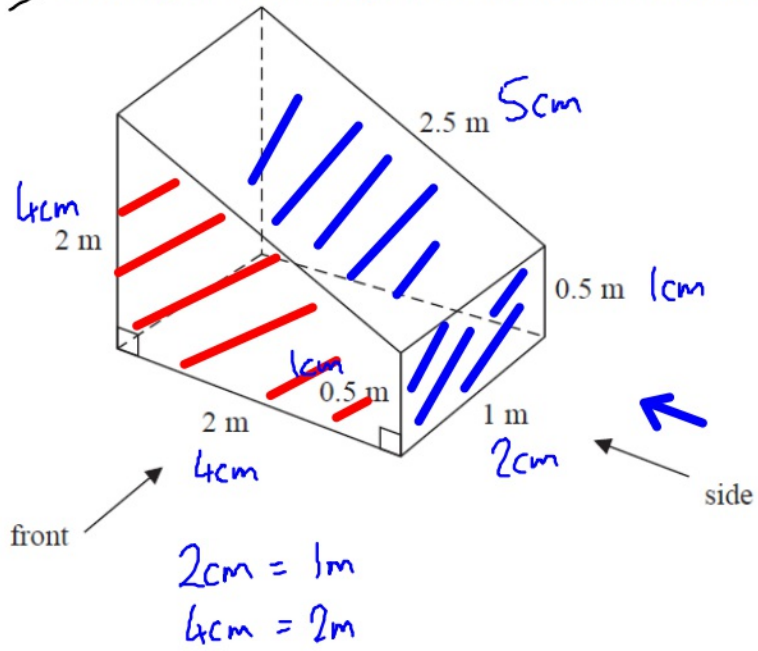


On the centimetre grid below, draw the front elevation and the side elevation of the prism.
Use a scale of 2 cm to 1 m.

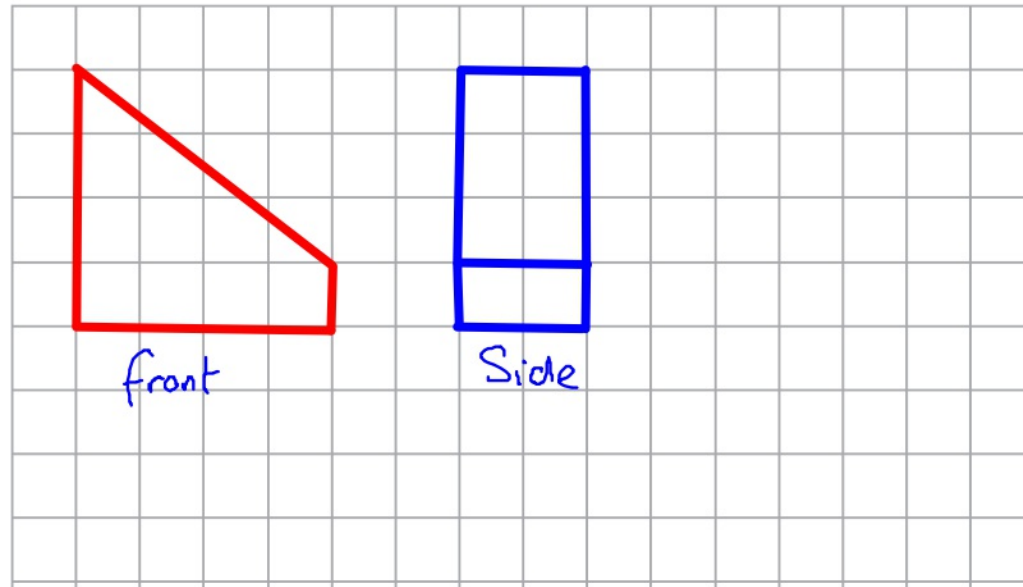


3 The diagram shows a prism with a cross section in the shape of a trapezium.

Video creator

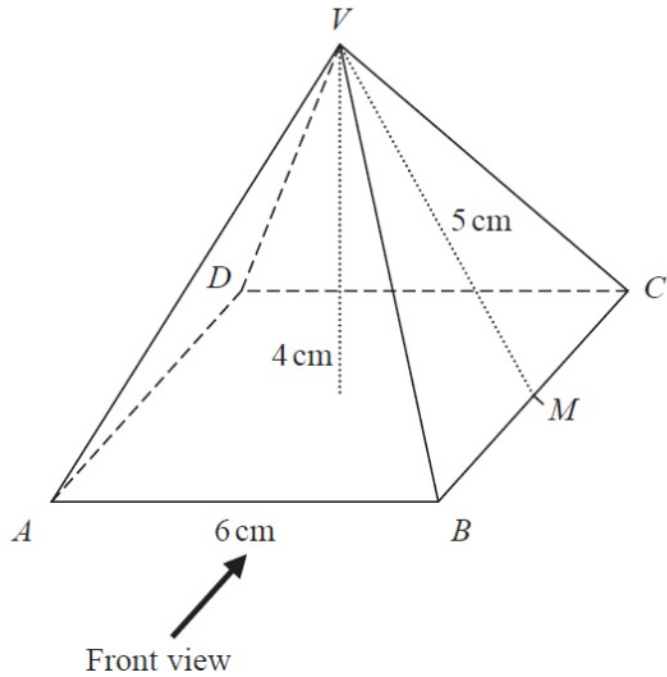


On the centimetre grid below, draw the front elevation and the side elevation of the prism. Use a scale of 2 cm to 1 m.



23 Here is a solid square-based pyramid, $VABCD$.

Video created by W Neill

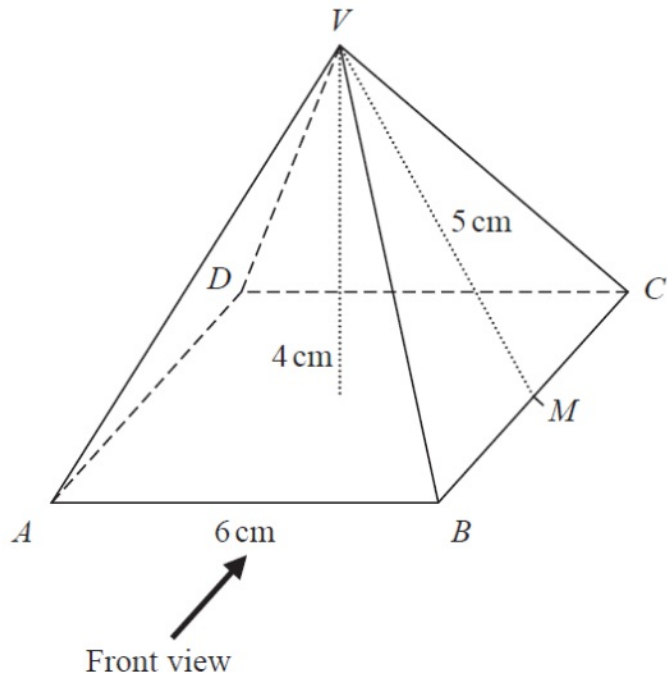


(a) Draw an accurate front elevation of the pyramid from the direction of the arrow.



The base of the pyramid is a square of side 6 cm .
The height of the pyramid is 4 cm .
 M is the midpoint of BC and $VM = 5\text{ cm}$.

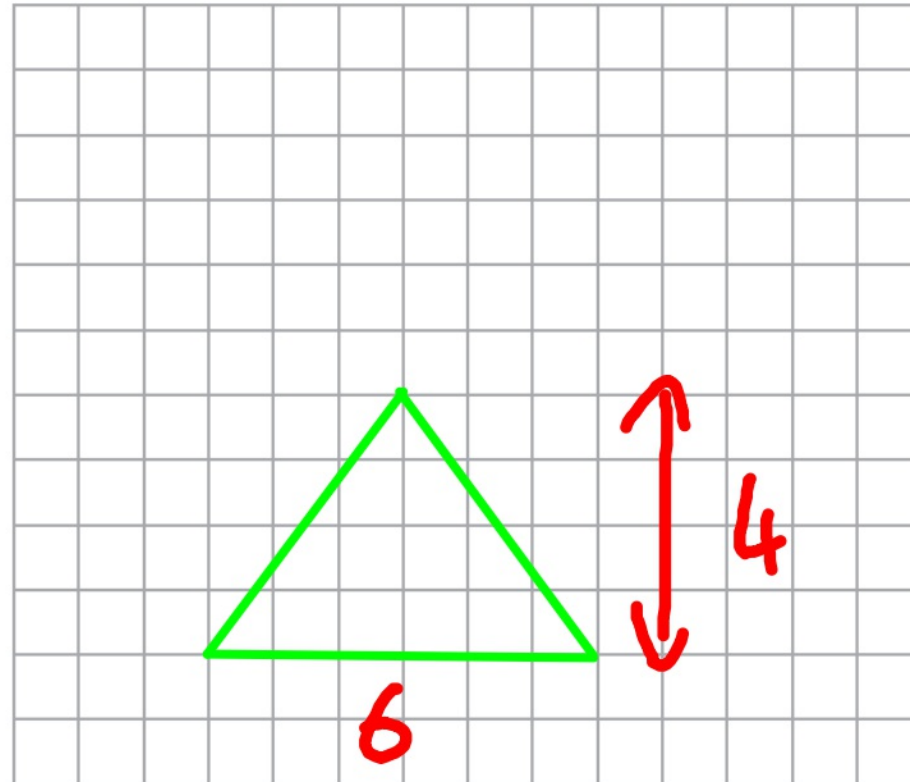
5 Here is a solid square-based pyramid, $VABCD$.



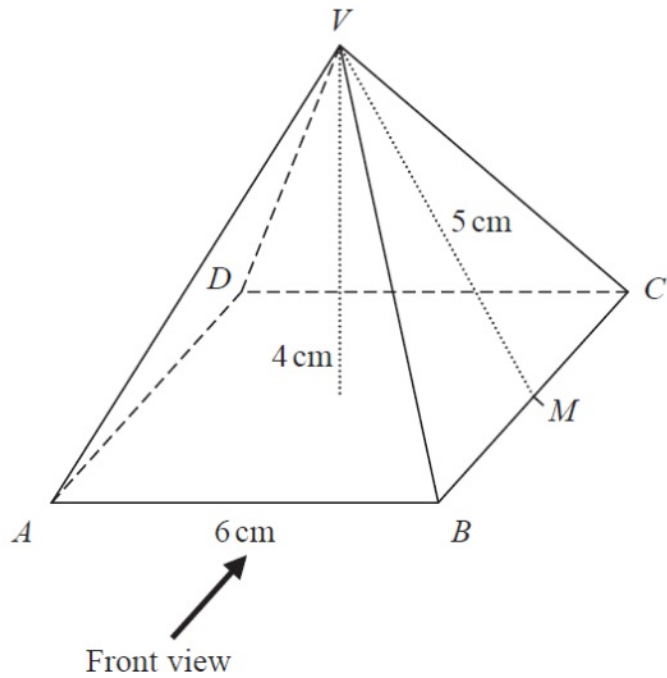
The base of the pyramid is a square of side 6 cm.
The height of the pyramid is 4 cm.
 M is the midpoint of BC and $VM = 5$ cm.

(a) Draw an accurate front elevation of the pyramid from the direction of the arrow.

G28



23 Here is a solid square-based pyramid, $VABCD$.

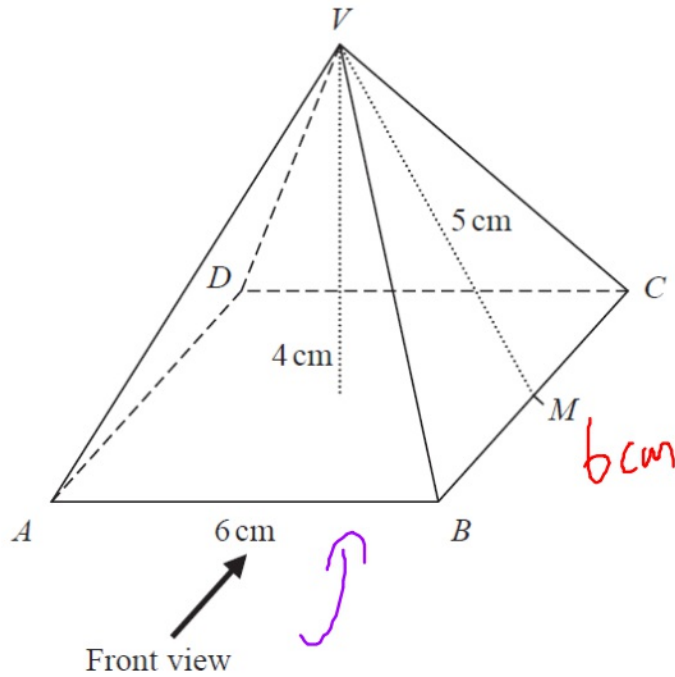


The base of the pyramid is a square of side 6 cm .
The height of the pyramid is 4 cm .
 M is the midpoint of BC and $VM = 5\text{ cm}$.

(b) Work out the total surface area of the pyramid.

.....
(4)

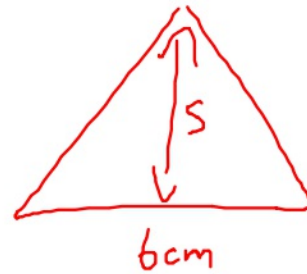
Here is a solid square-based pyramid, $VABCD$.



The base of the pyramid is a square of side 6 cm .
 The height of the pyramid is 4 cm .
 M is the midpoint of BC and $VM = 5\text{ cm}$.

(b) Work out the total surface area of the pyramid.

G29



$$\frac{B \times H}{2} = \frac{6 \times 5}{2} = 15\text{ cm}^2$$

$$4 \text{ faces} \times 15\text{ cm}^2 = 60\text{ cm}^2$$

$$\text{Bottom} = 6 \times 6 = 36\text{ cm}^2$$

$$60 + 36$$

$$\underline{\quad 96\text{ cm}^2 \quad}$$

(4)

AQA

14 (a) The front elevation, side elevation and plan of a solid are all the same, as shown.



Write down the name of the solid.

[1 mark]

Answer _____

14 (a) The front elevation, side elevation and plan of a solid are all the same, as shown.

G28



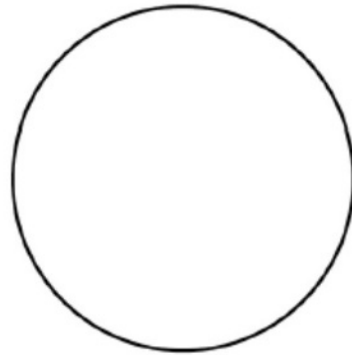
Write down the name of the solid.

[1 mark]

Answer

Cube

14 (b) The front elevation, side elevation and plan of a solid are all the same, as shown.



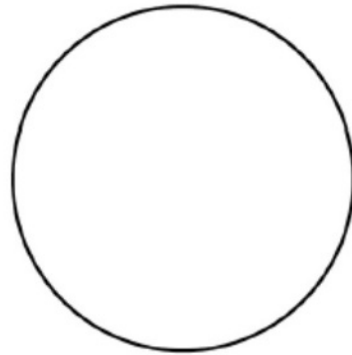
Write down the name of the solid.

[1 mark]

Answer _____

14 (b) The front elevation, side elevation and plan of a solid are all the same, as shown.

G28



Write down the name of the solid.

[1 mark]

Answer sphere

23

A solid shape is made from centimetre cubes.

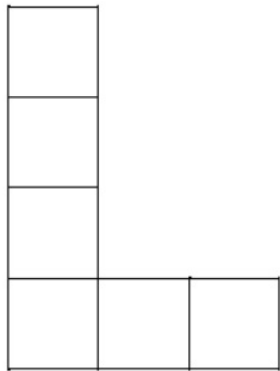
Video created by W Neill

G28

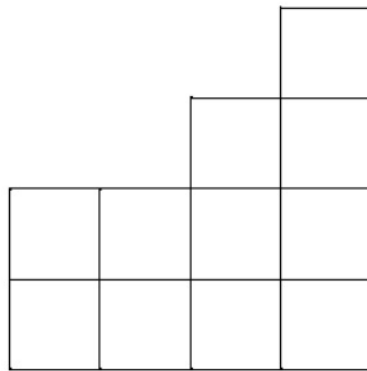
Here are the plan, side elevation and front elevation of the shape.

G31

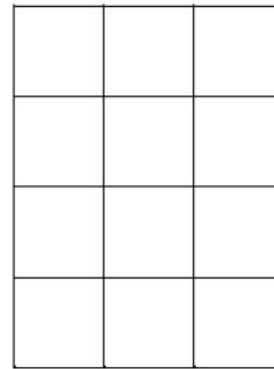
Plan



Side elevation

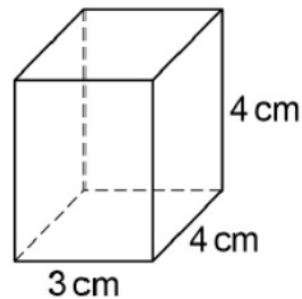


Front elevation



Centimetre cubes are added to make this cuboid.

How many cubes are added? **[3 marks]**



Answer _____

23

A solid shape is made from centimetre cubes.

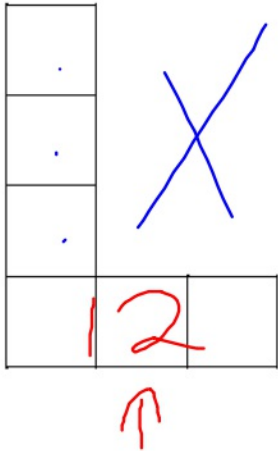
Video created by W Neill

G28

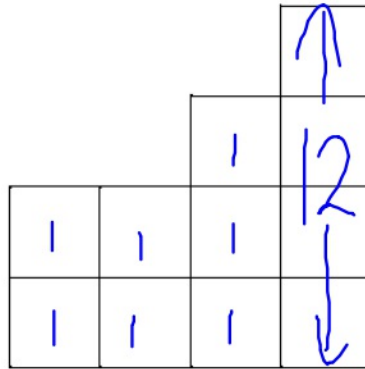
Here are the plan, side elevation and front elevation of the shape.

G31

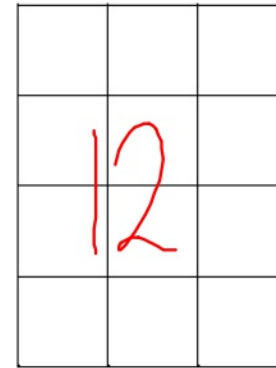
Plan



Side elevation



Front elevation



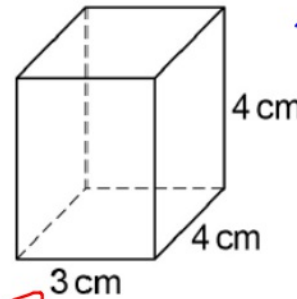
how many we have

$$\begin{array}{r}
 12 \\
 + 7 \\
 \hline
 19
 \end{array}$$

Centimetre cubes are added to make this cuboid.

How many cubes are added? [3 marks]

$$48 - 19 = 29$$



$$\begin{aligned}
 \text{Total} &= 4 \times 4 \times 3 \\
 &= 48 \text{ cm}^3
 \end{aligned}$$

FF

Answer 29 cubes