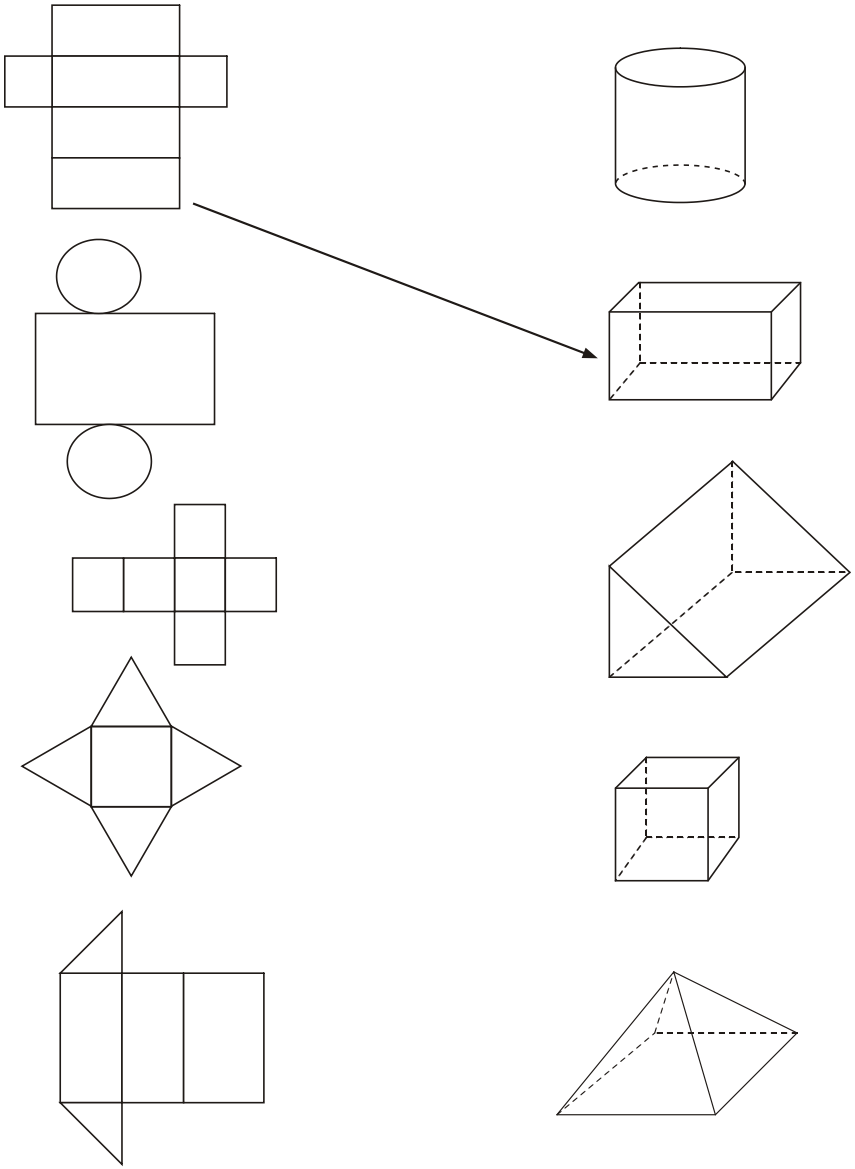
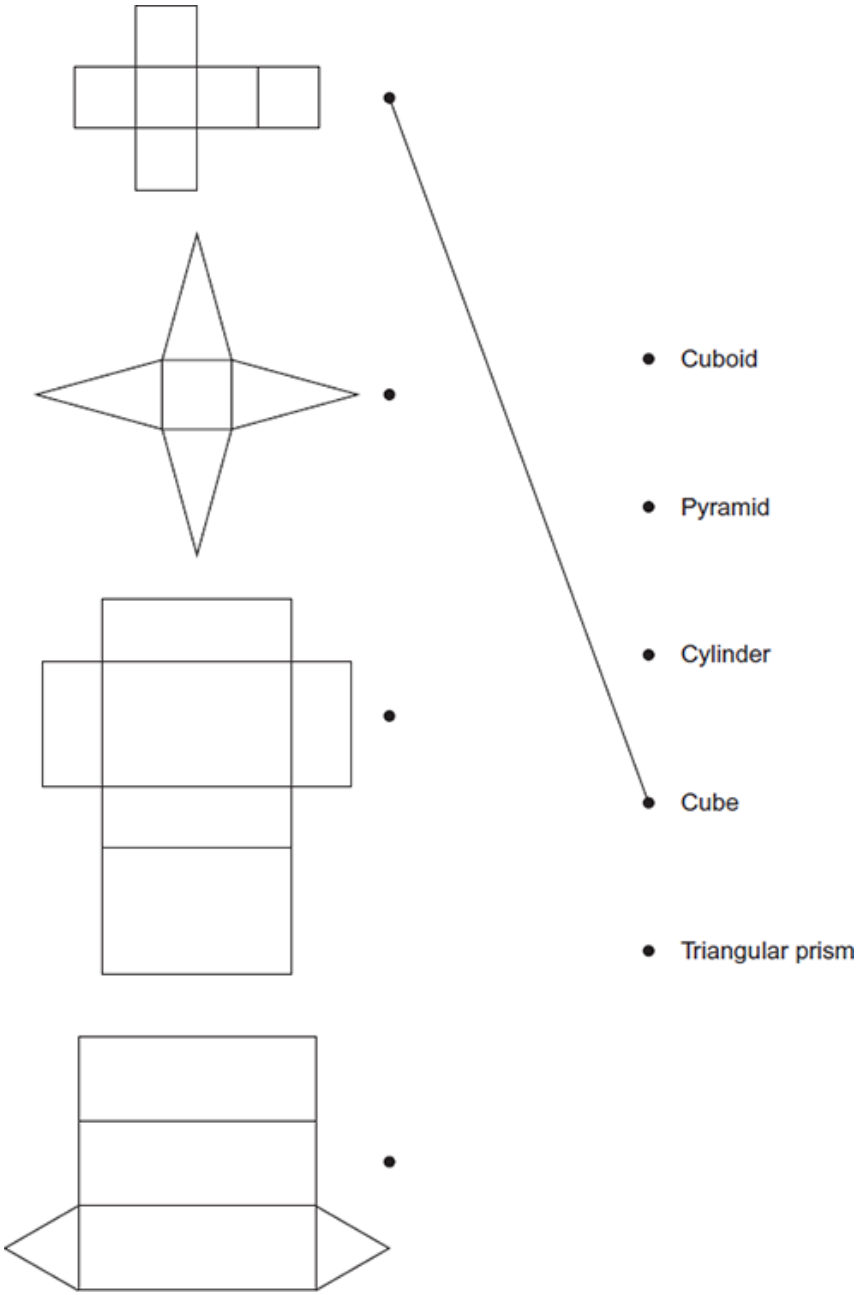
Year 8 Higher Homework Pack May 2020

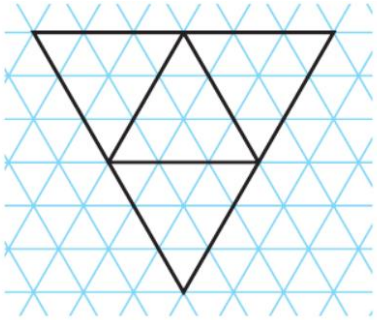
Match each net with a solid. The first one has been done.



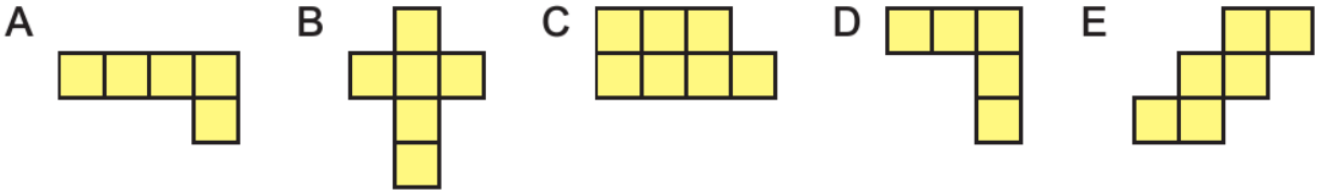
Draw an arrow from each of the other nets to its solid shape.



1. This net is drawn on centimetre triangular grid paper.
   a) What are the size of the angles of the triangular faces?
   b) Describe the solid shape that is made when the net is folded up.

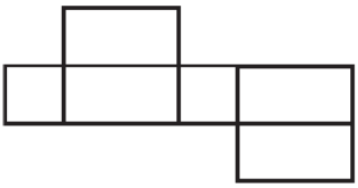


2. Which **two** of these could be the net of a cube?



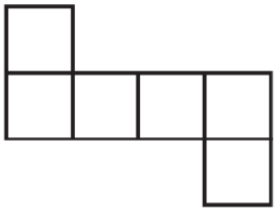
3. Which of these is the net of a cuboid? Give a reason for your answer.

4. a) Draw a tick next to two edges that meet when the net is folded up to make a cuboid.

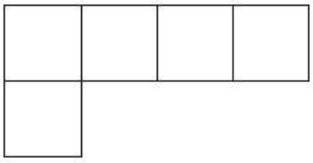


   b) Shade in two faces that are opposite when the net is folded up to make a cuboid

5. Miranda wants to the label the net with the numbers 1 to 6 to make a dice. Copy the net and label it so that when it is folded up to make a cube, numbers on opposite faces add up to 7.



6. The diagram shows part of a net of a cube.

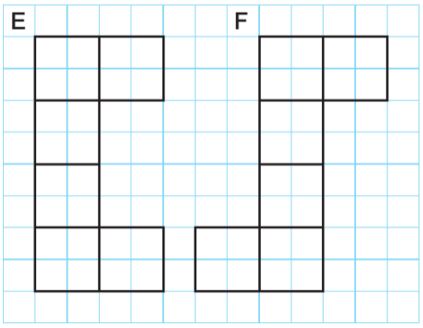


   (a) Add one square to the diagram to complete the net.

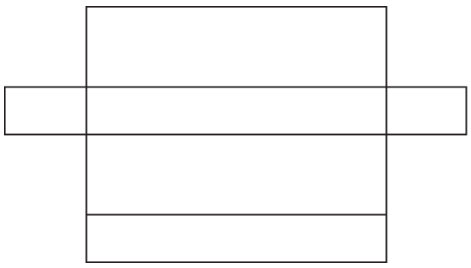
   Two opposite faces of the cube are to be shaded.

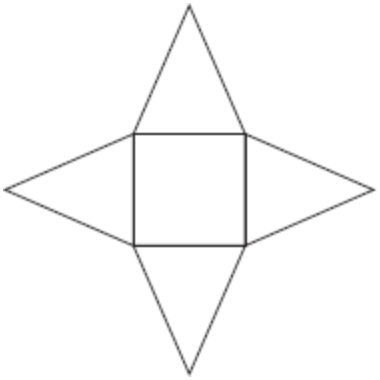
   (b) On the diagram, shade two faces to show how this can be done.

7. a) Which of E or F will form a cube.
   b) Draw one more net that you think will form a cube

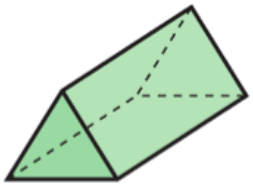


8. Write down the mathematical name of the shape made by each net.



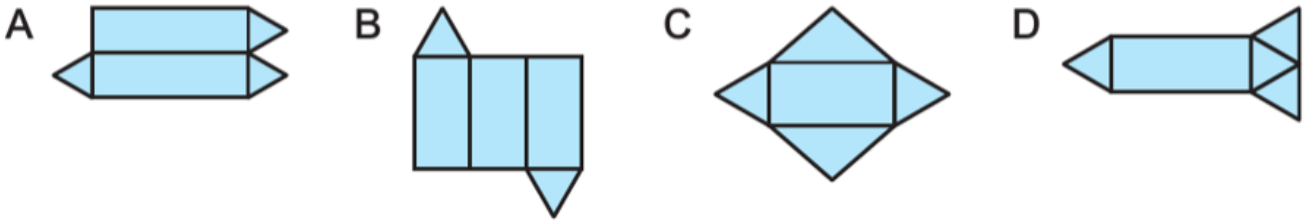


9. Here is a triangular prism.



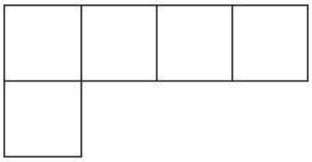
   a) Write down the number of faces on a triangular prism, and the shape of each face.

   b) Which of these shapes shows the net of a triangular prism?



   c) Draw a different net for this triangular prism.

10. The diagram shows part of a net of a cube.



(a) Add one square to the diagram to complete the net.

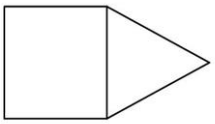
Two opposite faces of the cube are to be shaded.

(b) On the diagram, shade two faces to show how this can be done.

NETS – PROBLEM SOLVING

This is an incomplete net for a square based pyramid.

What shapes do you add to complete this net?



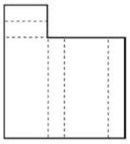
A 3 triangles

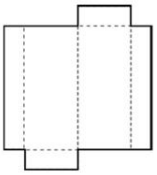
B 2 squares

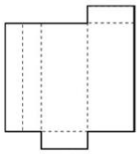
C 1 triangle and 3 squares

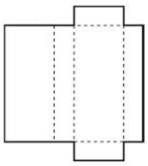
D 1 triangle and 2 squares

Which figure shows the net of a rectangular prism?

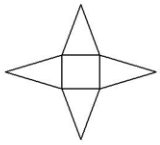
A 

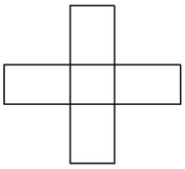
B 

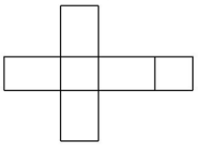
C 

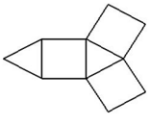
D 

Which diagram is the net for a square based pyramid?

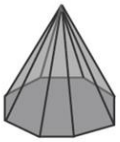
A 

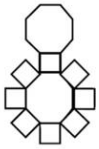
B 

C 

D 

Which is the correct net for this shape?



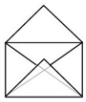
A 

B 

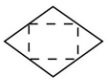
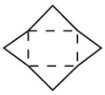
C 

D None of the above

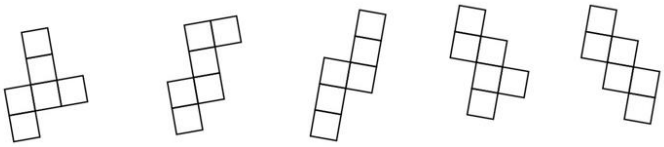
The diagram shows a rectangular envelope made by folding (and gluing) a single piece of paper.



What could the original unfolded piece of paper look like? (The dashed lines are the fold lines.)

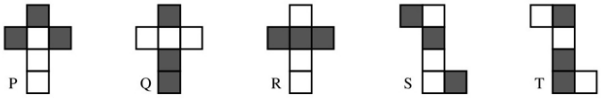
A  B  C  D 

How many of the following nets could be folded to make a cube?



A 2 B 3 C 4 D 5

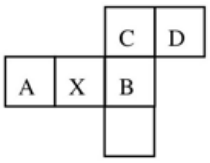
Each of the five nets P, Q, R, S and T is made from six squares. Both sides of each square have the same colour. Net P is folded to form a cube.



How many of the nets Q, R, S and T can be folded to produce a cube that looks the same as that produced by P?

A 1 B 2 C 3 D 4

If the net shown is folded to make a cube, which letter is opposite X ?

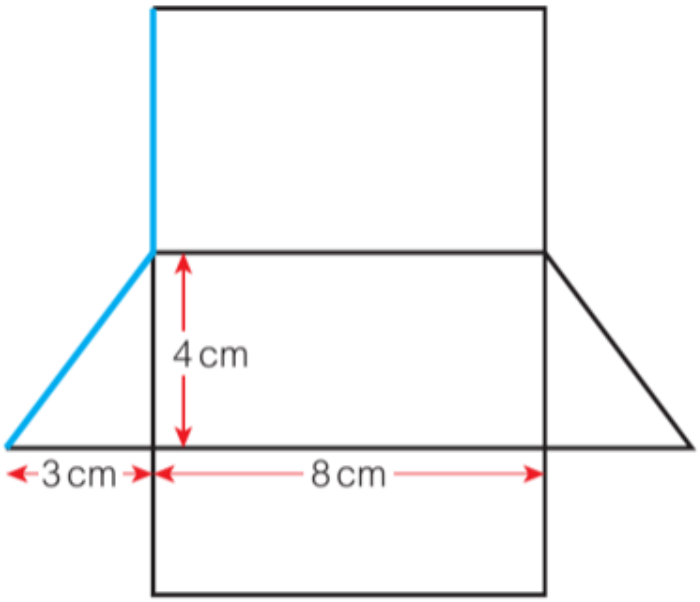


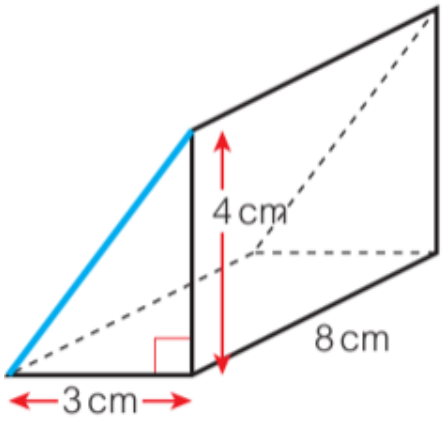
A B C D

DRAWING AND SKETCHING NETS

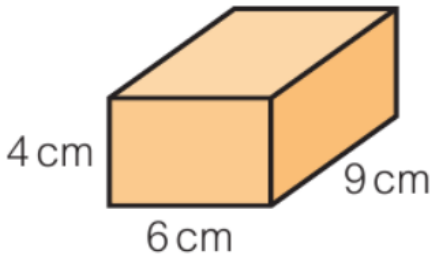
1. The diagram shows the net of a right-angled prism.

   Label the lengths of the sides.





2. Sketch a net of this cuboid. Label each side with its length.



Here is a triangular prism.

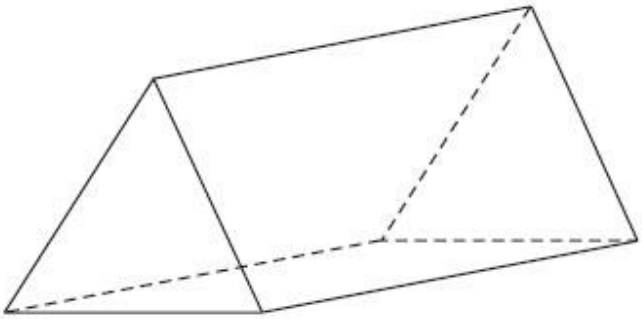
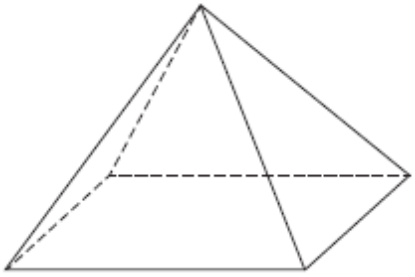


Diagram **NOT** accurately drawn

In the space below, draw a sketch of a net for the triangular prism.

The diagram shows a pyramid.



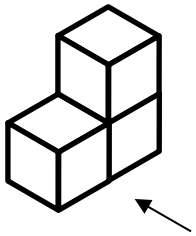
The base of the pyramid is a square.

In the space below, draw a sketch of a net for this pyramid.

Plans and elevations

For each diagram draw the plan and the front and side elevations. Use HegartyMaths to help you.
On each diagram the arrow indicates the direction of the front elevation.

1.

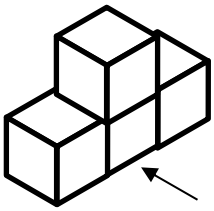


Plan

Front

Side

2.

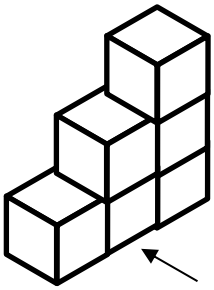


Plan

Front

Side

3.

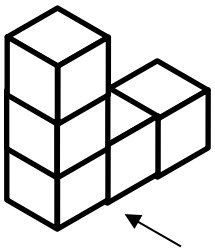


Plan

Front

Side

4.

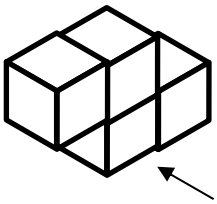


Plan

Front

Side

5.

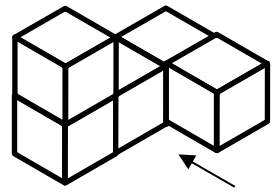


Plan

Front

Side

6.

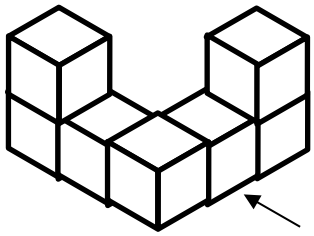


Plan

Front

Side

7.

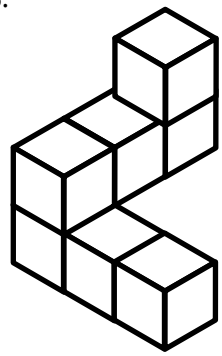


Plan

Front

Side

8.

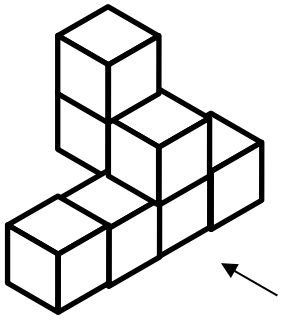


Plan

Front

Side

9.

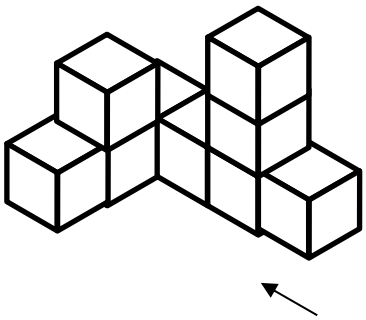


Plan

Front

Side

10.

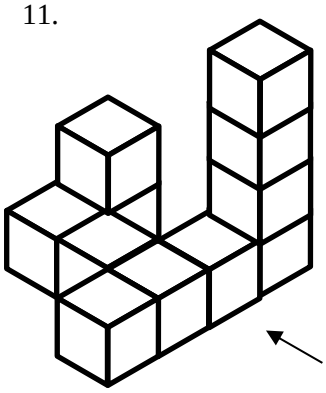


Plan

Front

Side

11.

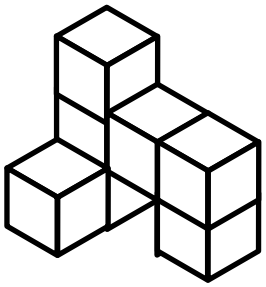


Plan

Front

Side

12.



Plan

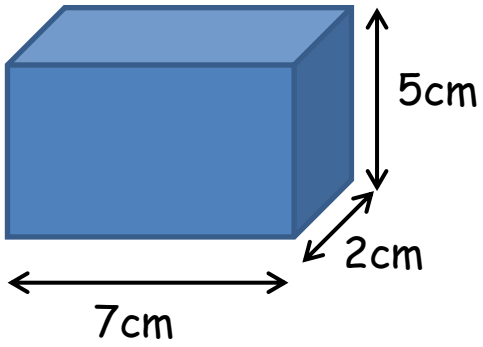
Front

Side

Volume of Cubes and Cuboids

L.O: TBAT find the volume of cube and cuboids

1)

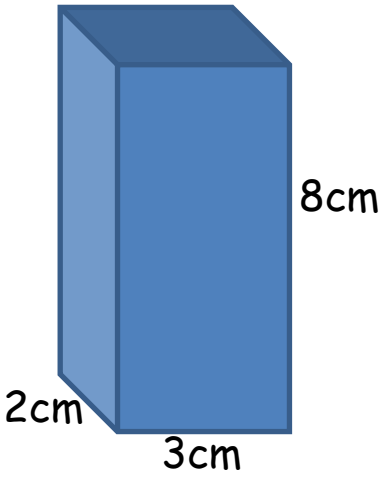


Length x width x height

5 x 2 x 7 =

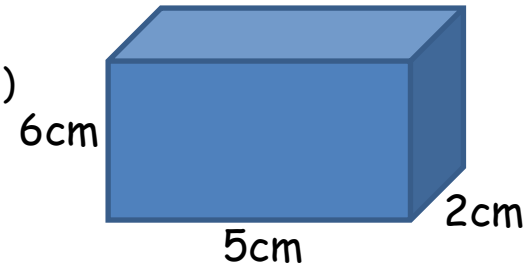
Volume =……

2)



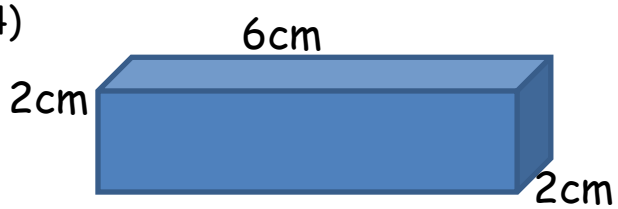
Volume =……

3)



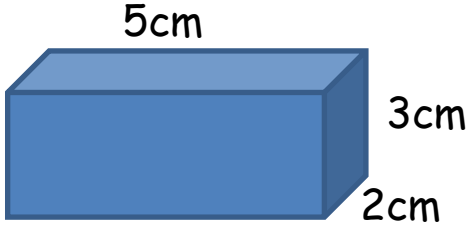
Volume =……

4)



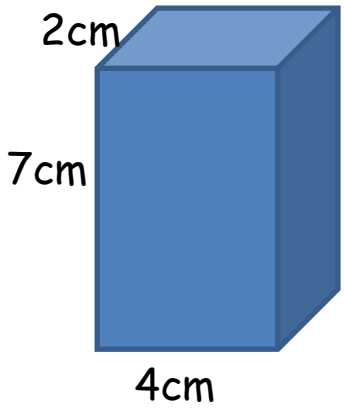
Volume =……

5)



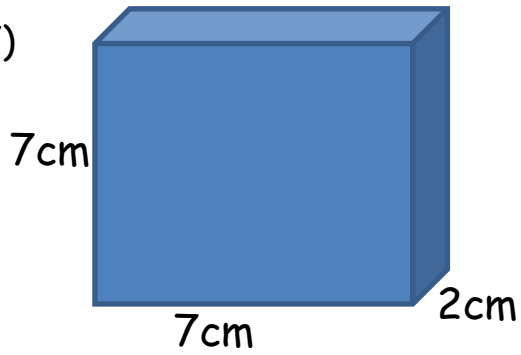
Volume =……

6)



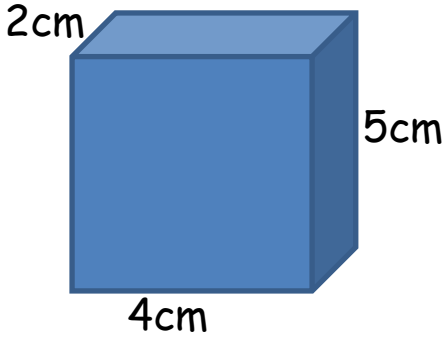
Volume =……

7)



Volume =……

8)



Volume =……

9)

Volume =……

<u>Extension Question:</u> If the volume of a cuboid was $54cm^3$, with a length of 9cm and a height of 2cm, what is its width?

The length, width and height of a cuboid are: 5cm, 2cm and 3cm. What is its volume?

Find the missing measurements in this table:

Length	Width	Height	Volume
10cm	4cm	3cm	
	6cm	2cm	$60cm^3$
8cm	2cm		$48cm^3$
10m		6m	$180m^3$
9mm	2mm		$72mm^3$

a) A cuboid has a volume of $72cm^3$. If the length, width and height are all whole numbers, how many different sets of measurements can you find?

b) How many can you find for a cuboid with volume $96cm^3$?

What is the volume of a cube which has an edge measuring 2cm?

One face of a cube has an area of $25cm^2$. What is its volume?

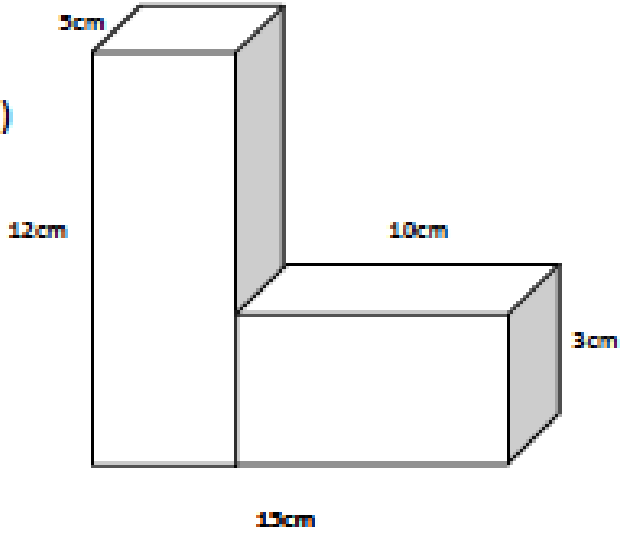
The surface area of a cube is $96cm^2$. What is the length of one side? What is its volume?

A cube has a volume of $216cm^3$. What is the length of one side?

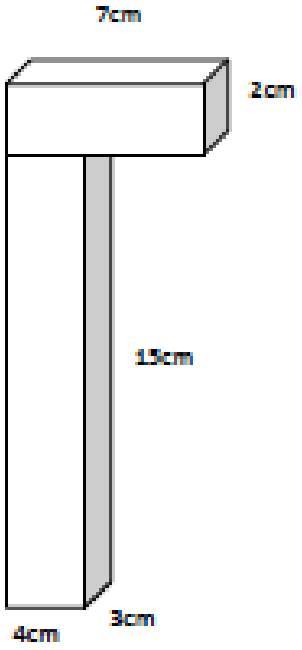
Kloggs Cereal Company is wanting to sell its new breakfast cereal—Choco Crispy Poppers. A 500g portion will take up $700cm^3$. The box manufacturer makes 3 sizes of cardboard boxes:

Find the volume of these shapes:

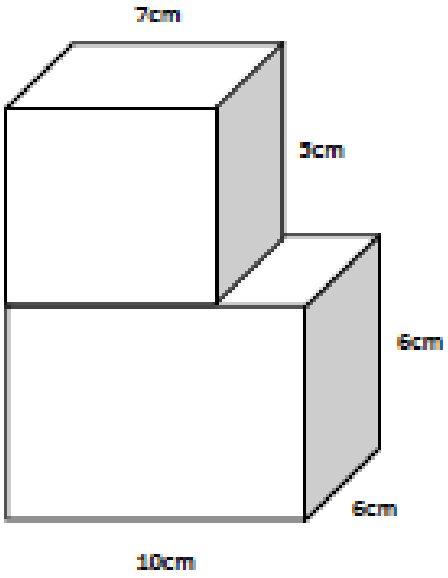
a)



b)



c)



d)