Plans and Elevations

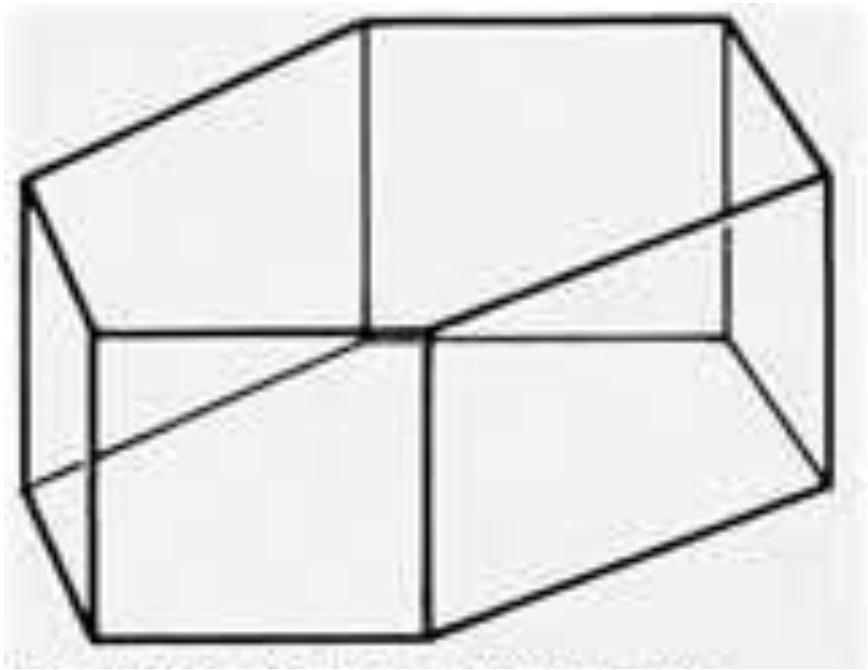
LO: Use 2D representations of 3D solids.

Mental Math– TRUE OR FALSE

STAND UP → TRUE

SIT DOWN → FALSE

00:30



Faces = 8

Edges = 18

Vertices = 12

TRUE

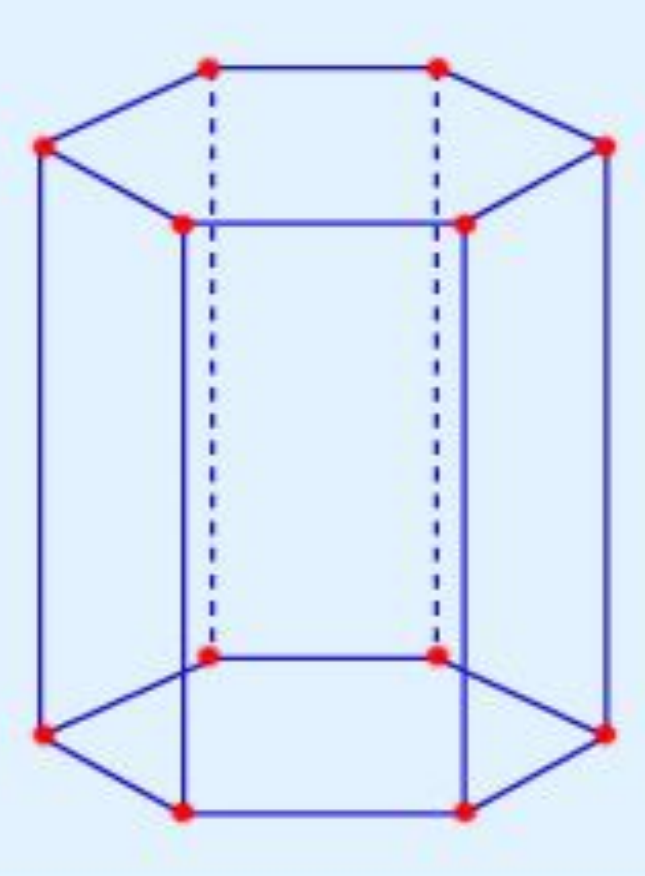
Plans and Elevations

LO: Use 2D representations of 3D solids.

Mental Math– TRUE OR FALSE

STAND UP → TRUE

SIT DOWN → FALSE



00:30

Faces = 8

Edges = 16

Vertices = 12

FALSE

Plans and Elevations

LO: Use 2D representations of 3D solids.

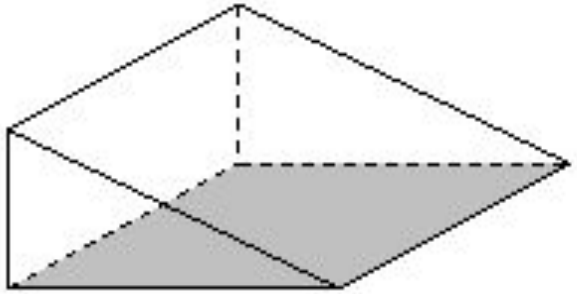
Mental Math– TRUE OR FALSE

STAND UP → TRUE

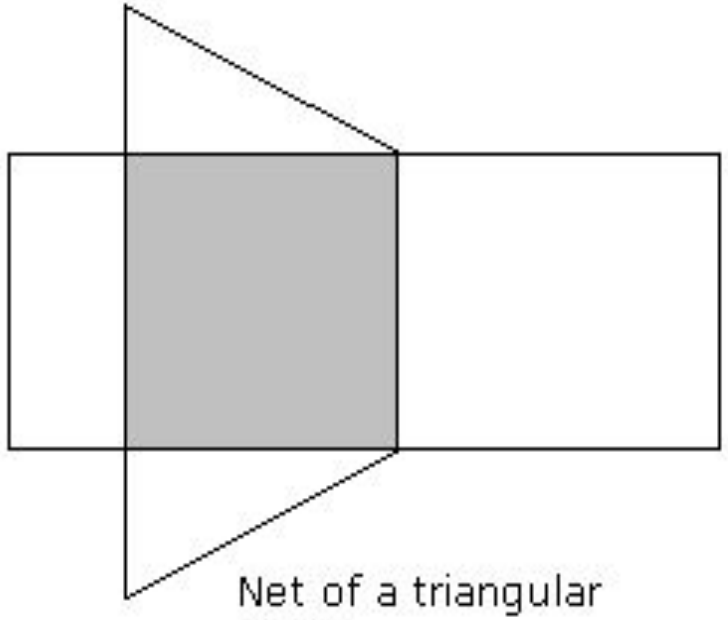
SIT DOWN → FALSE

00:30

This is the net of the solid



Triangular prism



Net of a triangular prism

TRUE

Plans and Elevations

LO: Use 2D representations of 3D solids.

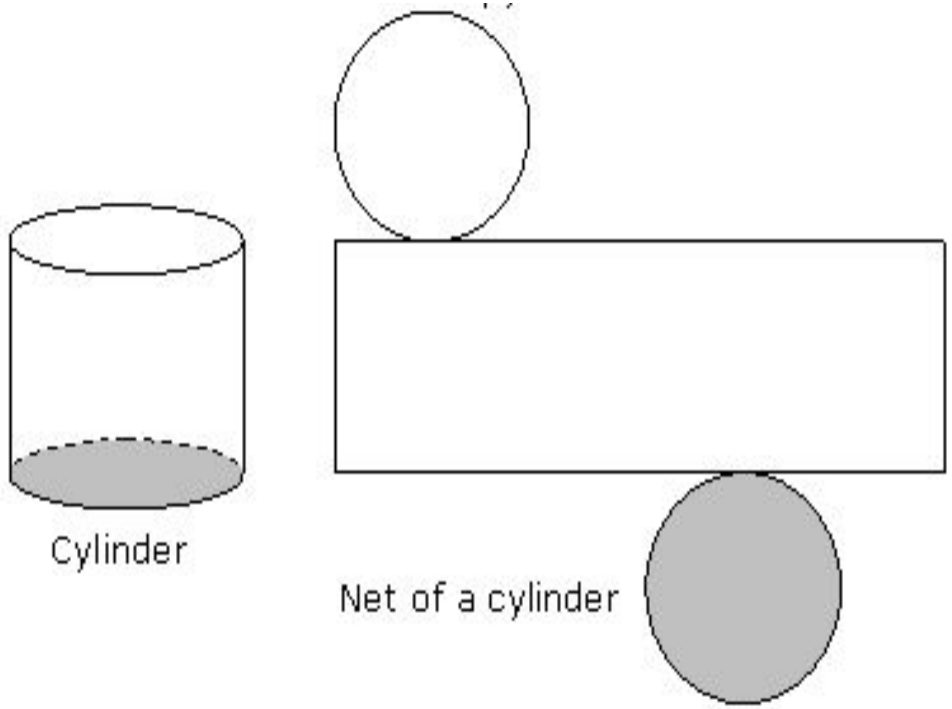
Mental Math– TRUE OR FALSE

STAND UP → TRUE

SIT DOWN → FALSE

00:30

This is the net of the solid



TRUE

Plans and Elevations

LO: Use 2D representations of 3D solids.

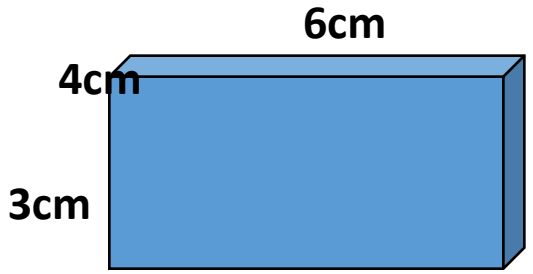
Mental Math– TRUE OR FALSE

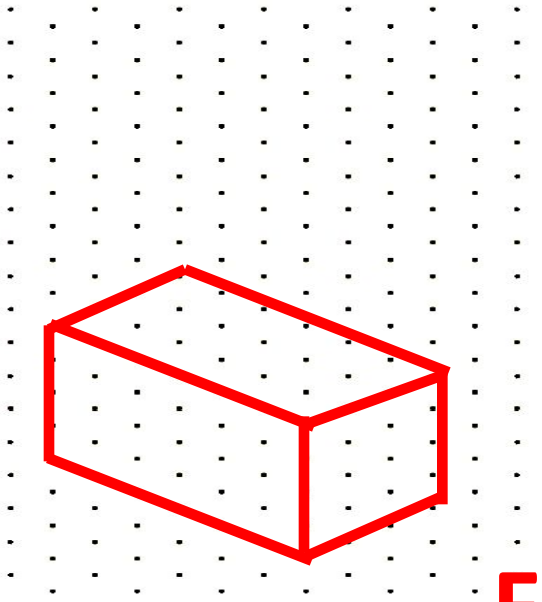
STAND UP → TRUE

SIT DOWN → FALSE

This is the isometric drawing

00:30





FALSE

Plans and Elevations

LO: Use 2D representations of 3D solids.

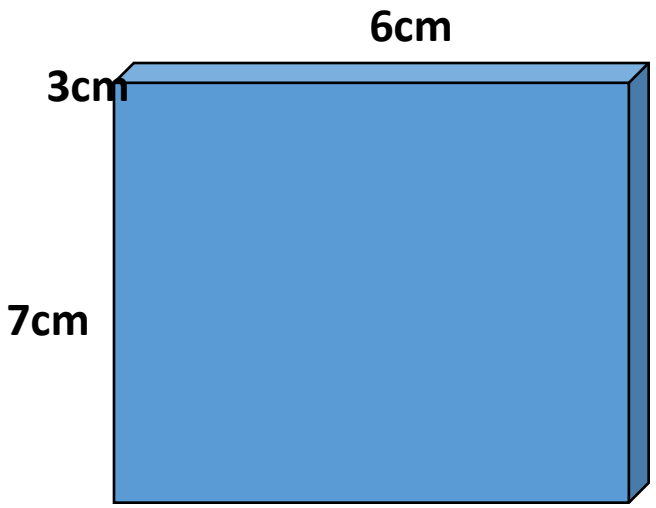
Mental Math– TRUE OR FALSE

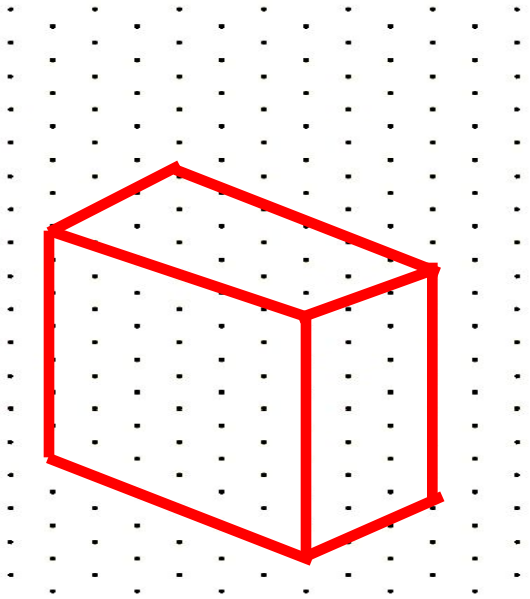
STAND UP → TRUE

SIT DOWN → FALSE

This is the isometric drawing

00:30



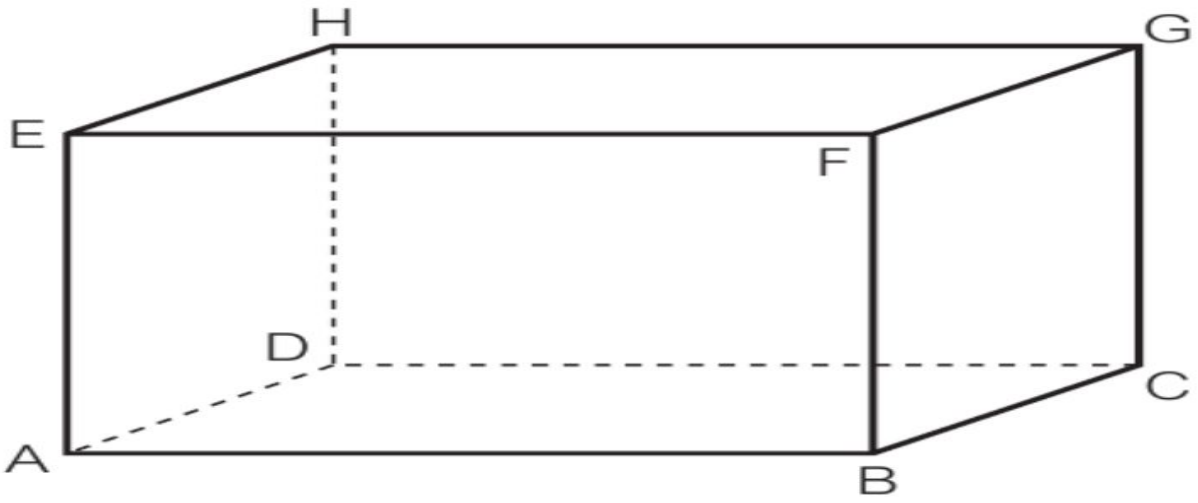


TRUE

STARTER

LO: Use 2D representations of 3D solids.

Look at this cuboid.



Copy and complete these sentences.

a The edge AE is parallel to the edg

b The edge EF is parallel to the edg

c The edge AB is perpendicular to ..... and .....

d The faces ABCD and ..... are parallel.

e The faces ABFE and BCGF meet at edge .....

f If two edges meet, they meet at a .....

g If two faces meet, they meet at an .....

05:00

a CG **b** GH, AB, CD

c Any two of AD, EH, BC, FG, AE, DH, BF, CG

d EFGH **e** BF

f vertex **g** edge

Plans and Elements

LO: Use 2D representations of 3D solids.

GCSE/iGCSE Assessment Objective Specification – Foundation/Higher

✓ A	recognise and give the names of solids
✓ B	understand the terms 'face', 'edge' and 'vertex' in the context of 3D solids

draw and interpret 2D representations of 3D shapes, for example nets, plans and elevations;

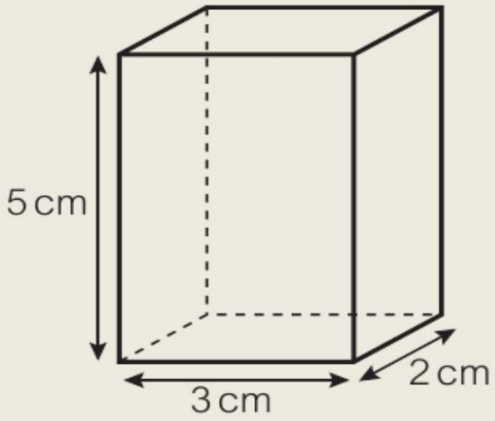
Key Concept

LO: Use 2D representations of 3D solids.

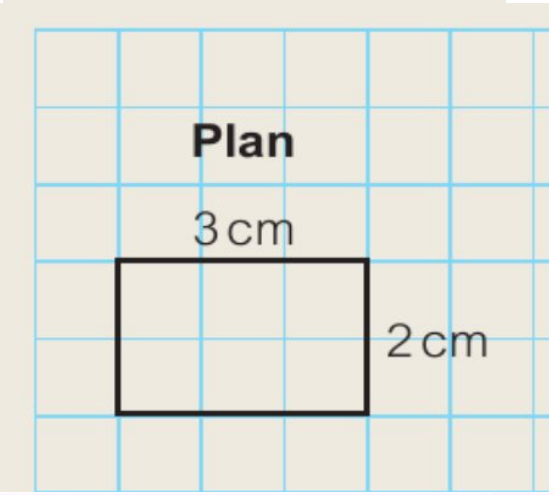
10 minutes

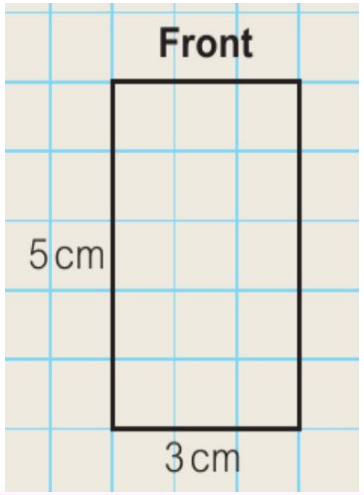
Worked example

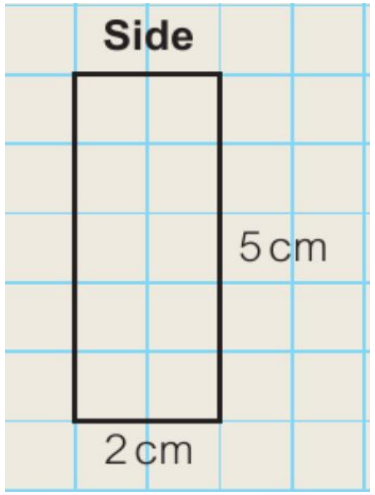
Draw the **plan**, the **front elevation** and the **side elevation** of this cuboid on squared paper.



Use a ruler.
Measure accurately.
Label the lengths.





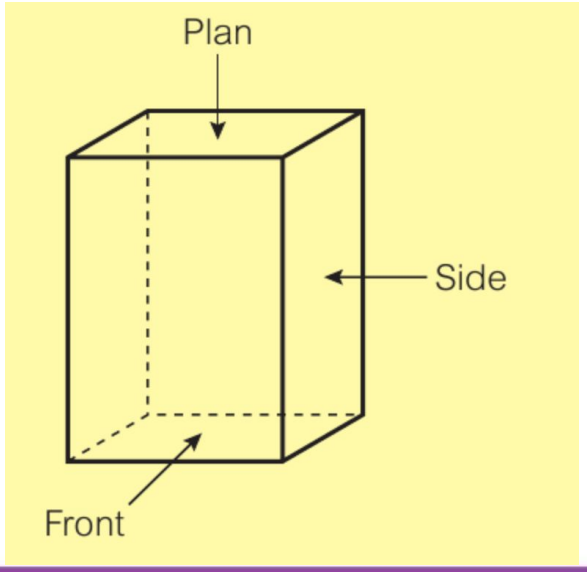


Key point

The **plan** is the view from above the object.

The **front elevation** is the view of the front of the object.

The **side elevation** is the view of the side of the object.



Key Concept

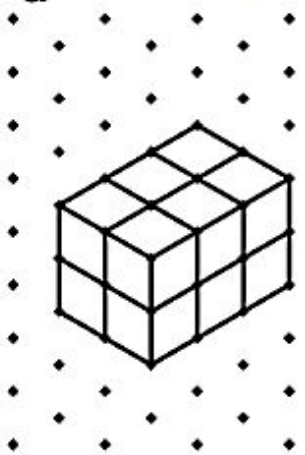
LO: Use 2D representations of 3D solids.

These solids are made from centimetre cubes.
Draw the plan, front elevation and side elevation of each solid on squared paper.

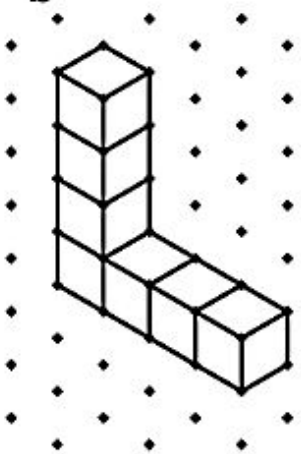
MY TURN

YOUR TURN

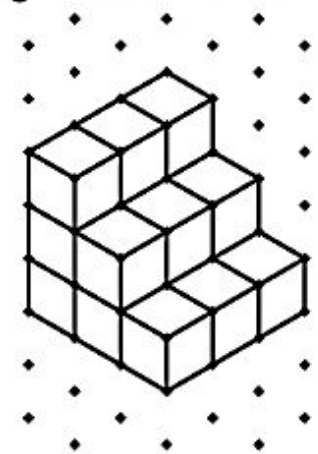
a



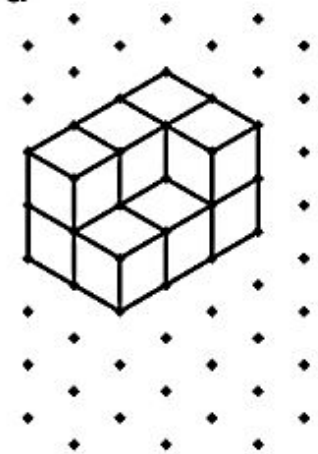
b



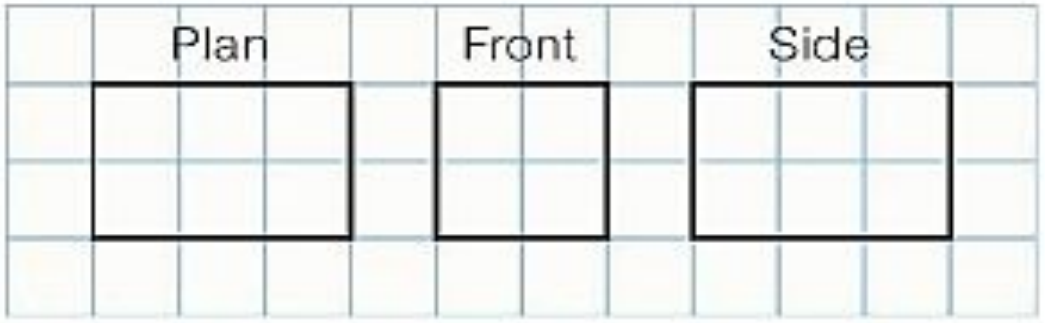
c



d

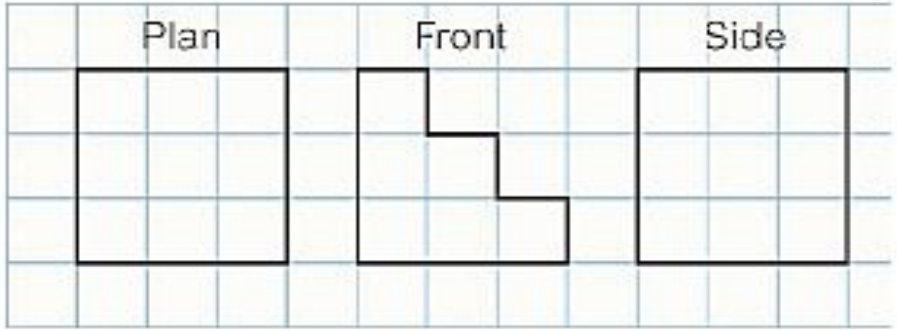


a

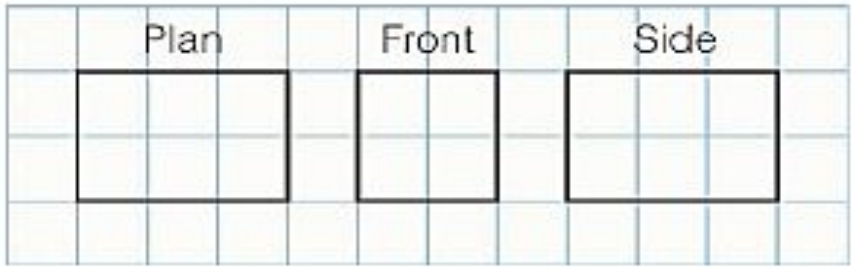


b

c



d



MINI_PLENARY

LO: Use 2D representations of 3D solids.

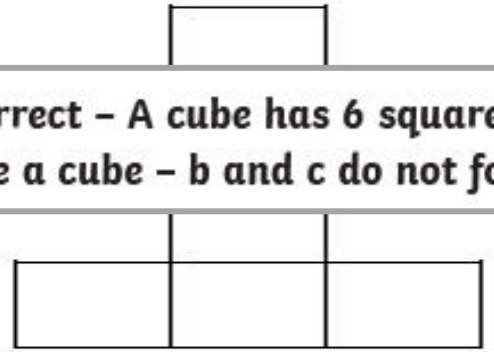
02:00

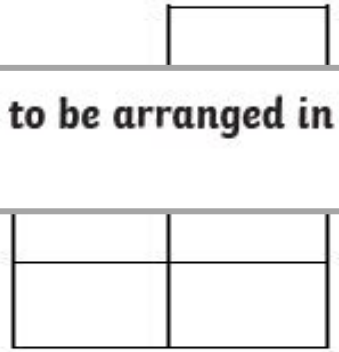
1)

All of these shape nets will fold to make a cube because they all have 6 square faces.

Do you agree with this statement? Prove it

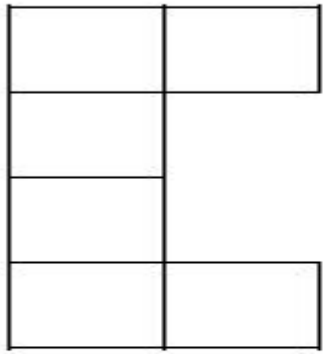
b)



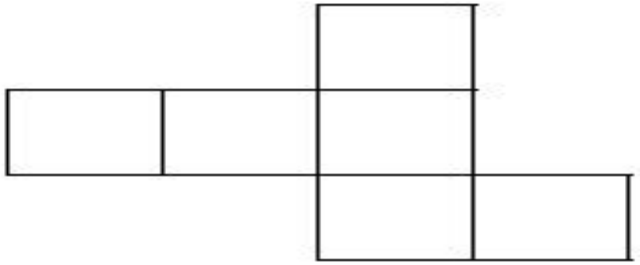


Incorrect – A cube has 6 square faces, but these have to be arranged in a way that will fold to make a cube – b and c do not fold to make a cube.

c)



d)



Core Task

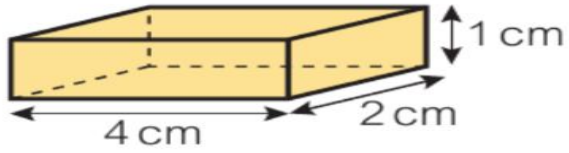
LO: Use 2D representations of 3D solids.

Task 1:

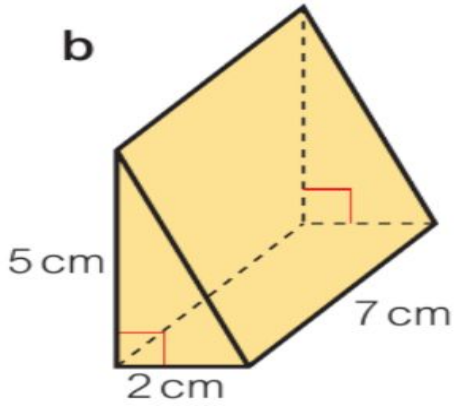
10:00

Draw the plan, the front elevation and the side elevation of each solid on squared paper.

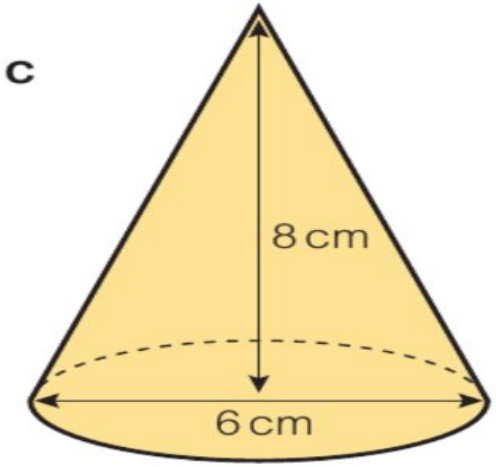
a



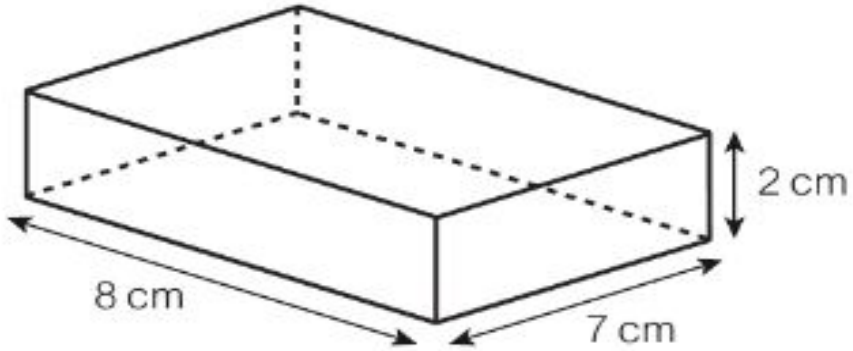
b



c



Task 2:



a Draw this cuboid on isometric paper.

b Draw the front elevation, side elevation and plan view of the cuboid.

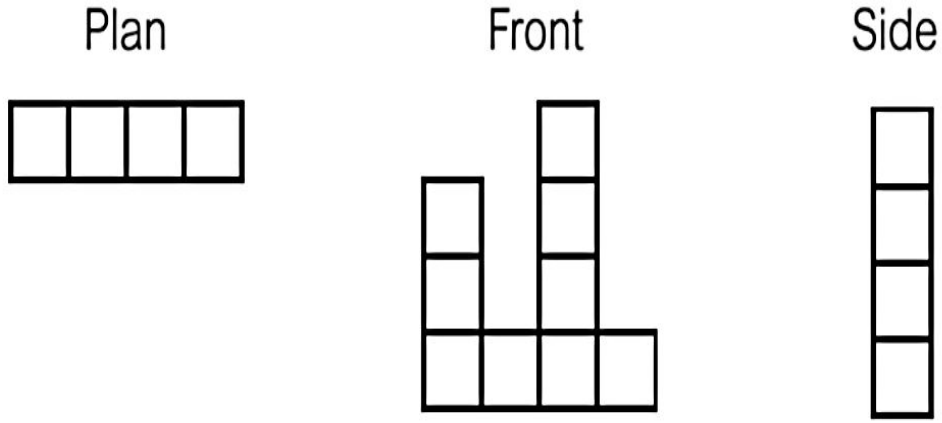
Core Task

LO: Use 2D representations of 3D solids.

Task 3:

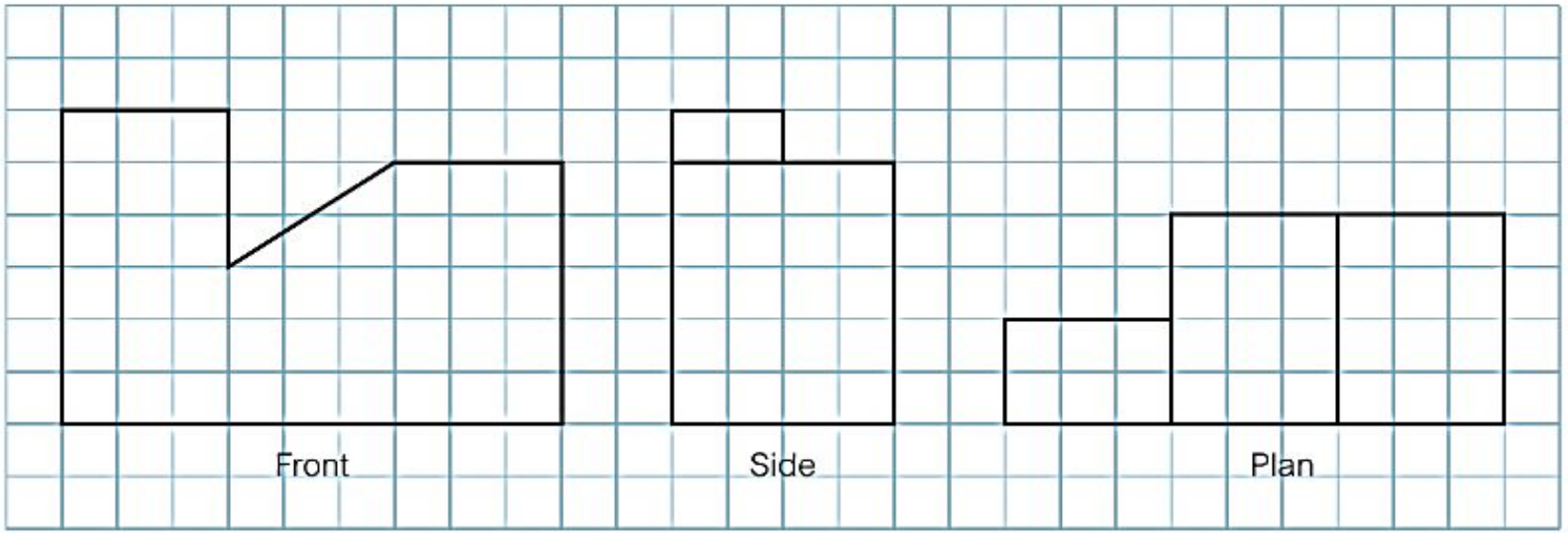
10:00

Problem-solving Here are the plan, front and side elevations of an irregular 3D solid.
Use cubes to make the solid.
Then draw it on isometric paper.



CHALLENGE

The diagram shows the front, side and plan views of a shape.
Draw an isometric diagram of the shape.



Plans and Elevations

LO: Use 2D representations of 3D solids.

GCSE/iGCSE Assessment Objective Specification – Foundation/Higher

✓ A	recognise and give the names of solids
✓ B	understand the terms 'face', 'edge' and 'vertex' in the context of 3D solids

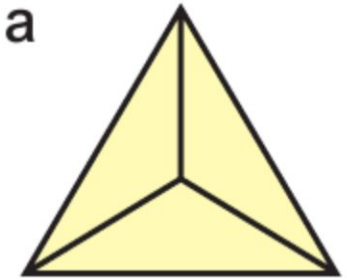
✓ draw and interpret 2D representations of 3D shapes, for example nets, plans and elevations;

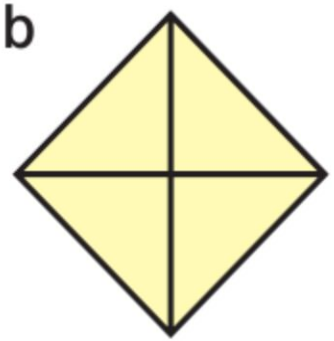
Plenary

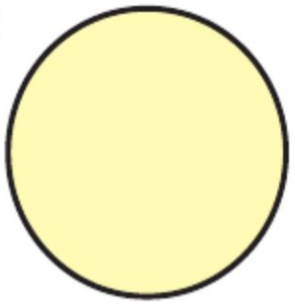
LO: Use 2D representations of 3D solids.

02:00

Here are the plan views of some solids.
What could each one be?

a 

b 

c 

d