

fs4u

Interpreting & Constructing 2D Representations of 3D Objects

‘How To’ Booklet 21

Interpreting & Constructing 2D Representation of 3D Objects

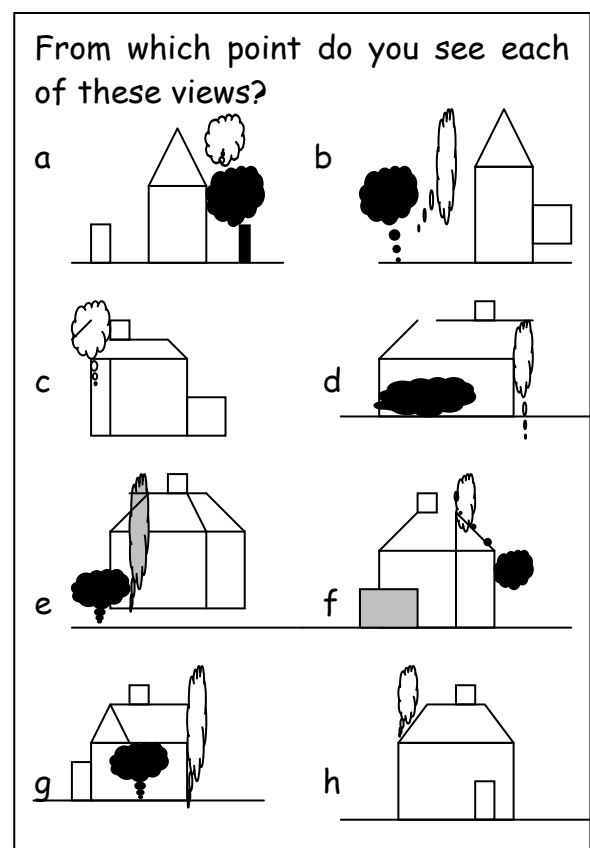
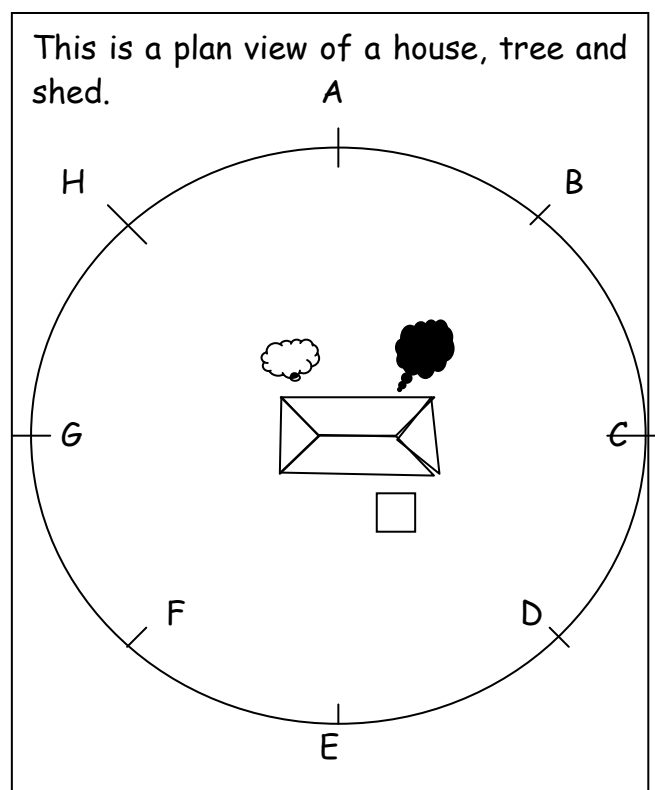
Equipment required. Ruler, pencil, triangular and isometric paper

Plans & Elevations

- ❖ Think and look carefully at the details before you answer.
- ❖ Try and picture it 3-dimensionally.

Now have a go

Task 1



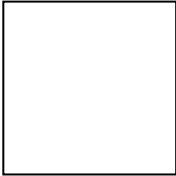

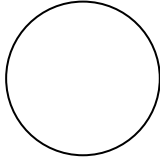
Ok? Have this checked and turn over.

Use Mathematical Terms to Describe Common 2D Shapes & 3D Objects

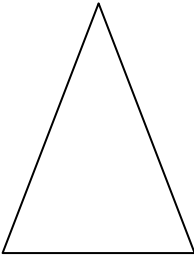
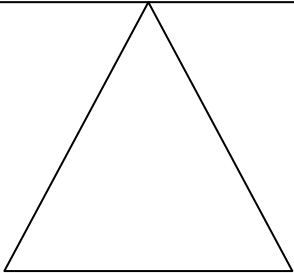
Below are shown common 2D shapes along with their mathematical terms.

Task 2

Draw the 3D objects in the appropriate gaps above their labels.

| | | | |
|-----------|---|---|---|
| 2D Shapes |  |  |  |
| | Square | Rectangle | Circle |

| | | |
|-----------|------|--------|
| 3D Shapes | | |
| | Cube | Cuboid |

| | | |
|-----------|---|---|
| 2D Shapes |  |  |
| | Isosceles Triangle | Equilateral Triangle |

| | | |
|-----------|-------|----------|
| 3D Shapes | | |
| | Prism | Cylinder |

Use Mathematical Terms to Describe Common 2D Shapes & 3D Shapes

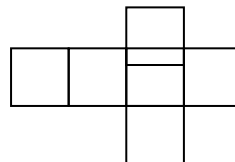
List some everyday objects which could be described by the following mathematical terms:

Example

| | |
|----------------------|---------------------------------|
| Circle | clock, coin, compact disc |
| Cylinder | can of, tomatoes, beans, Pepsi |
| Cuboid | video, filing cabinet |
| Cube | dice, stock cube (eg OXO) |
| Rectangle | sheet of A4 paper, tissue box |
| Square | table top, chessboard |
| Prism | Toblerone bar, roof of a house |
| square-based pyramid | Egyptian pyramids, church spire |
| isosceles triangle | sandwiches in a plastic case |
| equilateral triangle | road side (Give Way) |

Nets – For some of the following tasks you may need isometric or other appropriate paper. Ask your tutor for advice.

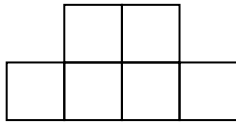
The net of a cube can look like this.



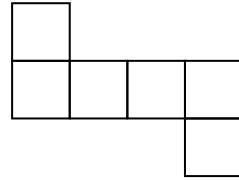
Task 3

Which of the following are also nets of cubes?

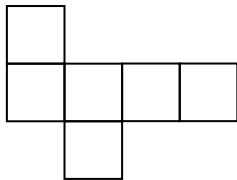
a)



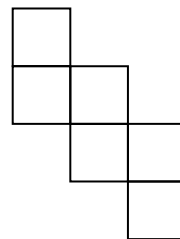
b)



c)



d)

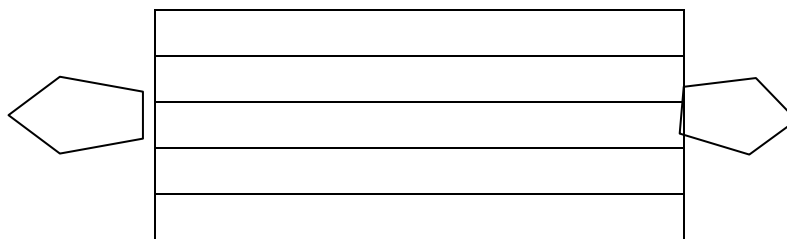


Task 4

a) Say what shape you think can be made from the nets below.

b) Make a sketch of each shape.

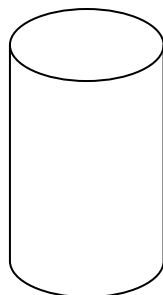
i)



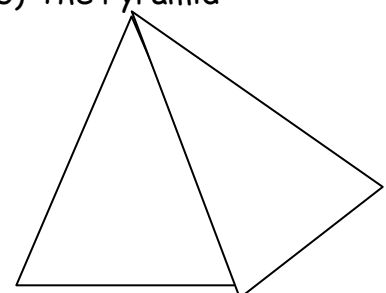
Task 5

Make a sketch of a net for:

a) The Cylinder



b) The Pyramid

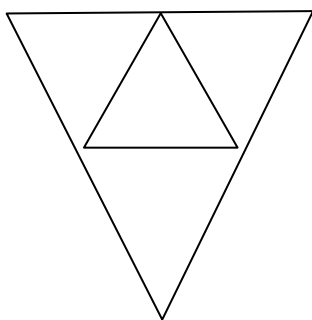


Interpretation of 2D Representation of 3D Objects

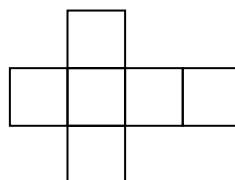
Task 6

Name the 3D shapes for the nets.

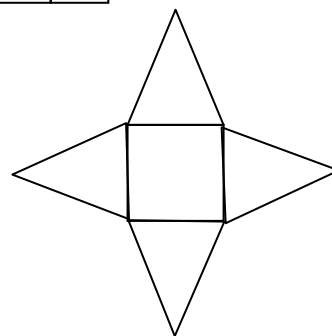
b.



a.



c.



Task 7

Using appropriate paper, sketch the following:

A chest of drawers

