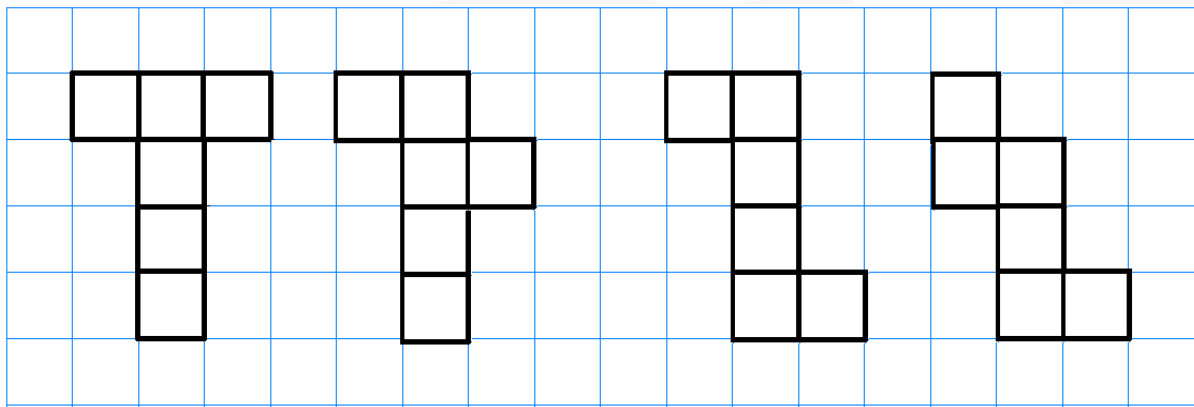
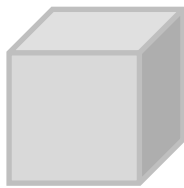


Shape and Space (MSS2)

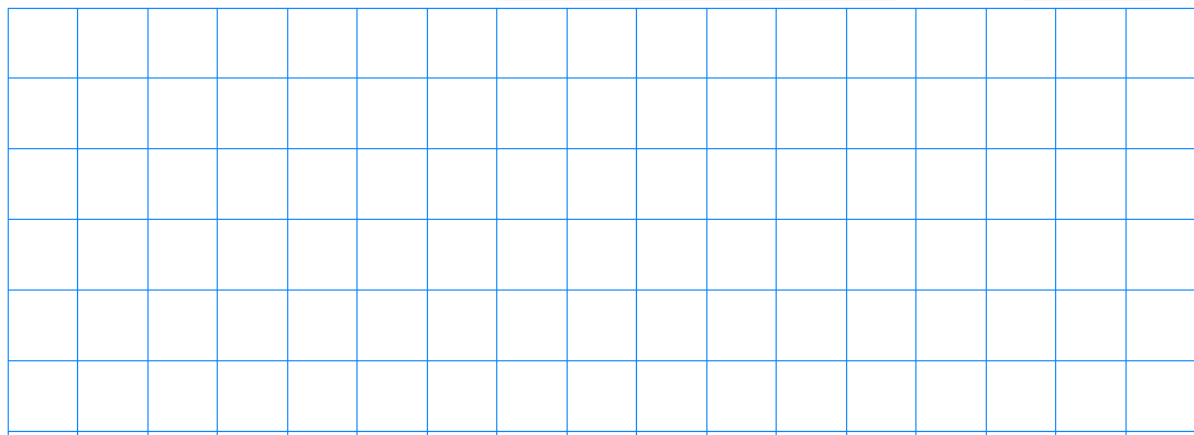
Nets (MSS2/L2.1)

3 dimensional shapes (3D), such as cubes, can be represented as 2 dimensional (2D) shapes on paper. If a 3D shape is opened up to be shown in 2D what you see is the 'net' of the object. There are 11 different ways to draw the net of a cube but each one can be folded up to produce the same shape. Some examples of the net of a cube can be seen below:



Task 1

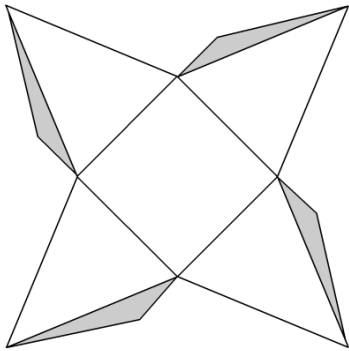
Draw some other possibilities:



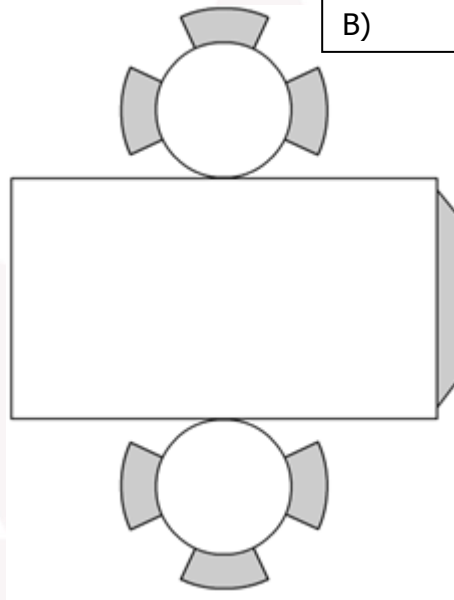
Task 2

Name the following 3D shapes represented by these 2D pictures:

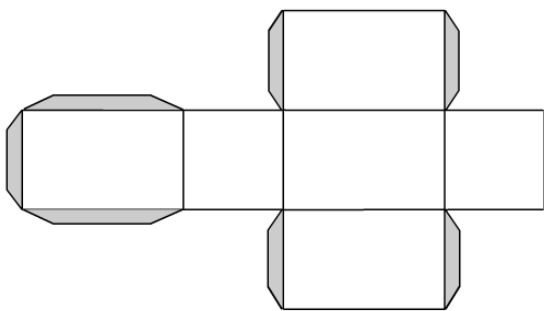
A)



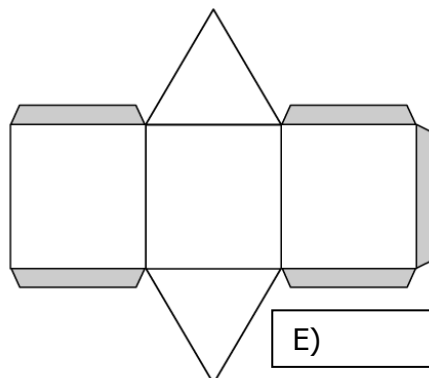
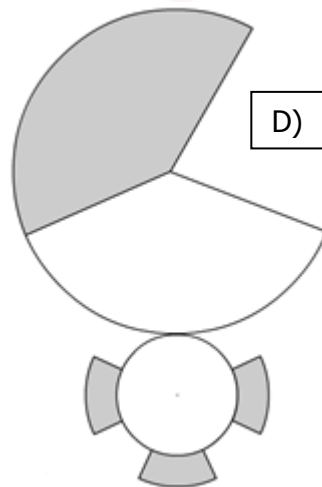
B)



C)



D)

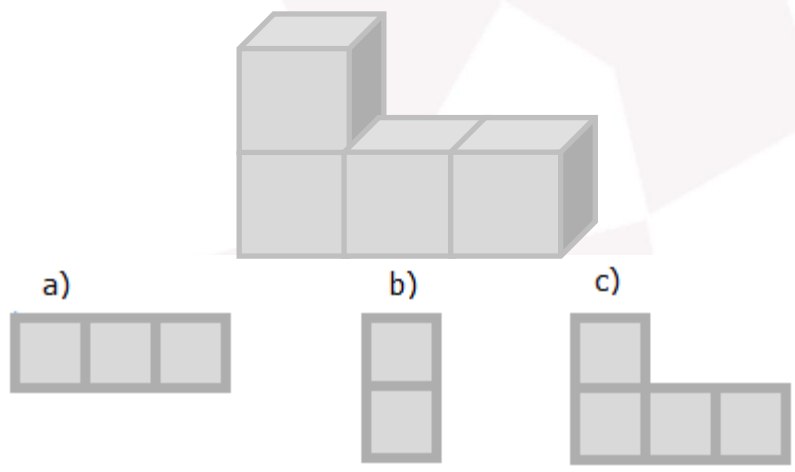


E)

Plan Views (MSS2/L2.1)

Formal drawings often show an image from above, this is known as the 'plan view' and is sometimes referred to as a bird's eye view. This type of drawing does not show if any part of the object is in relief or projects from the shape but shows the outline image of the object from a given angle. In the example below we can see that there are three views given:

- Plan View** or Birds Eye View which is the 2D view of an object from above,
- Side Elevation** which is the 2D view of an object from either the right or left side,
- Front Elevation** which is the 2D view of the object from the front.



Task 3

Draw the plan and front elevation for the following shapes:



Plan:

Front:



Plan:

Front:



Plan:

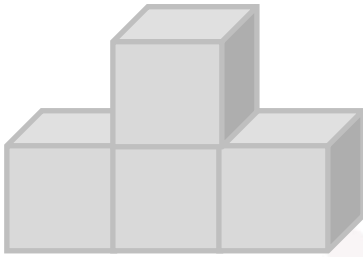
Front:



Plan:

Front:

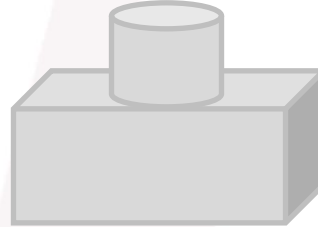
Draw the plan view, side view and front elevation of the following shapes:



Plan:

Side:

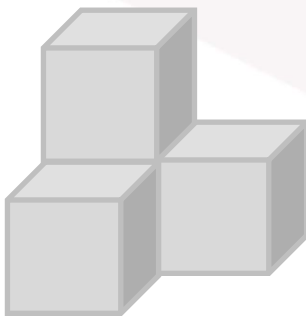
Front:



Plan:

Side:

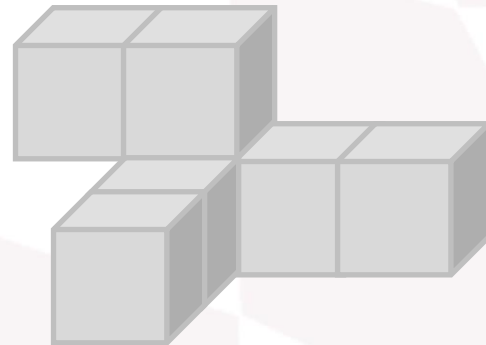
Front:



Plan:

Side:

Front:



Plan:

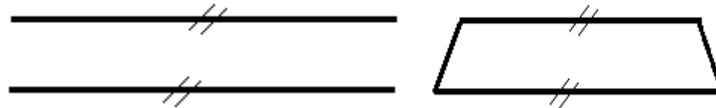
Side:

Front:

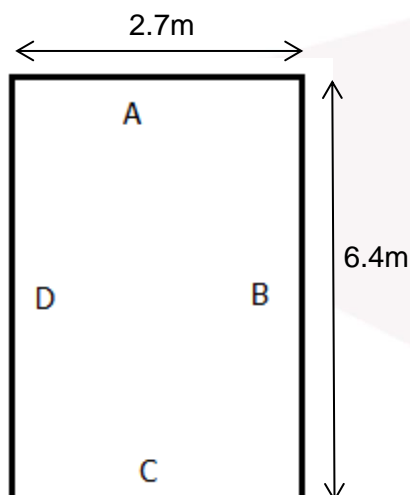
Parallel Lines (MSS2/L2.2)

Lines that run in the same direction, are always the same distance apart and never cross are called parallel lines. Examples in everyday lives include railway lines, strips of wallpaper or carpet tiles. Squares and rectangles are examples of shapes which have 2 sets of parallel lines.

On drawings, parallel lines may be represented by a line with 2 hashes across it, for example:



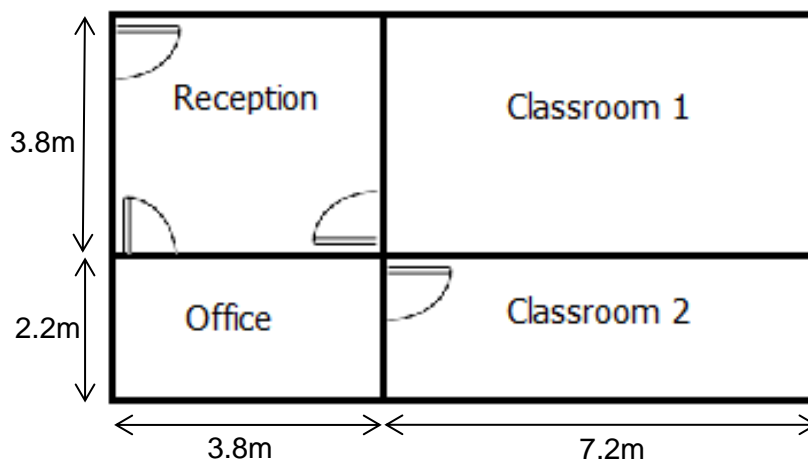
Measurements shown on drawings, for example estate agents plans of offices, can be represented by a double headed arrow on only one of the sides. Where two parallel lines are joined with right angles the corresponding sides must be the same length, therefore the measurements only need to be written once, as in the example below:



- The measurements of this room are the same for both side A and side C because they are parallel lines.
- The lengths for side B and D are also parallel lines and therefore same.

Task 4

Using the floor plan below, complete the following questions:



- a) Classroom 2 is 7.2m long. How wide is it?
- b) How long is classroom 1?
- c) How long is the Reception?
- d) What is the total length of the Reception and Classroom 1?
- e) If you wanted to relay the floor in classroom 2 with carpet tiles measuring 40cm x 40cm, how many tiles would you need to cover the length of the room?
- f) Below is the floor plan of a lounge. Calculate the length of coving required to go round the ceiling. Show your workings.
- g) You also want to hang new wallpaper. Each roll is 40cm wide. How many strips will you need to cover the length of the room?
- h) How many strips of wallpaper would you need to cover the width of the room?

