

Based on the following tutorial, draw the front, top and right and left side view of the 3D object shown in figure 1. Use the first angle orthographic projection method, your final design may look like the format shown in figure 2. All the dimensions are in cm, you may use your own scale, use an A4 size white sheet.

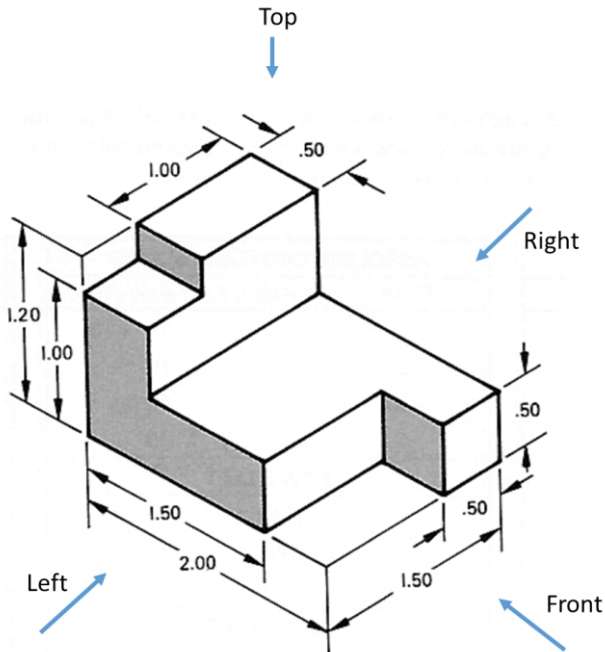


Figure 1

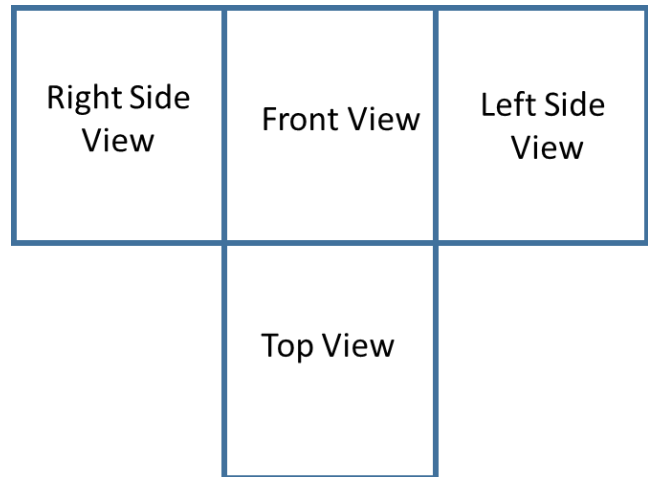


Figure 2

Tutorial on drawing side view

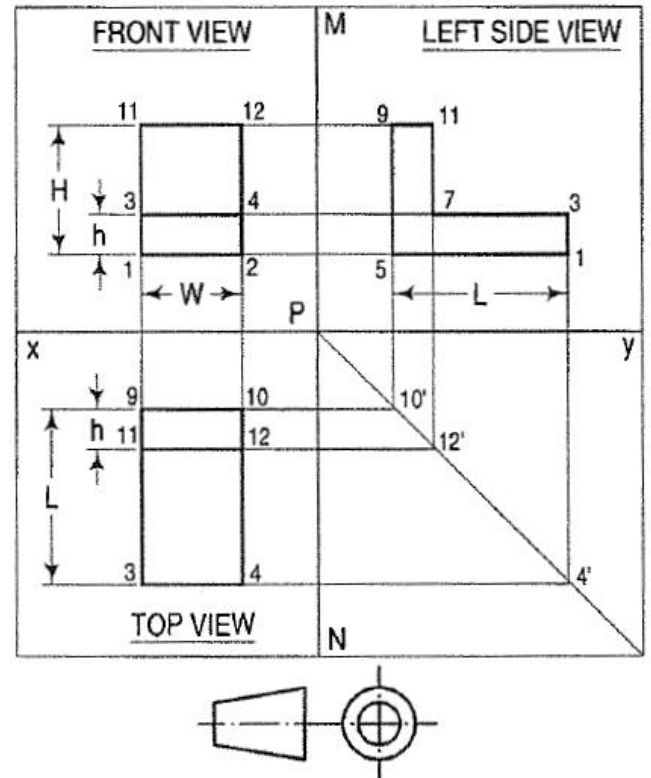
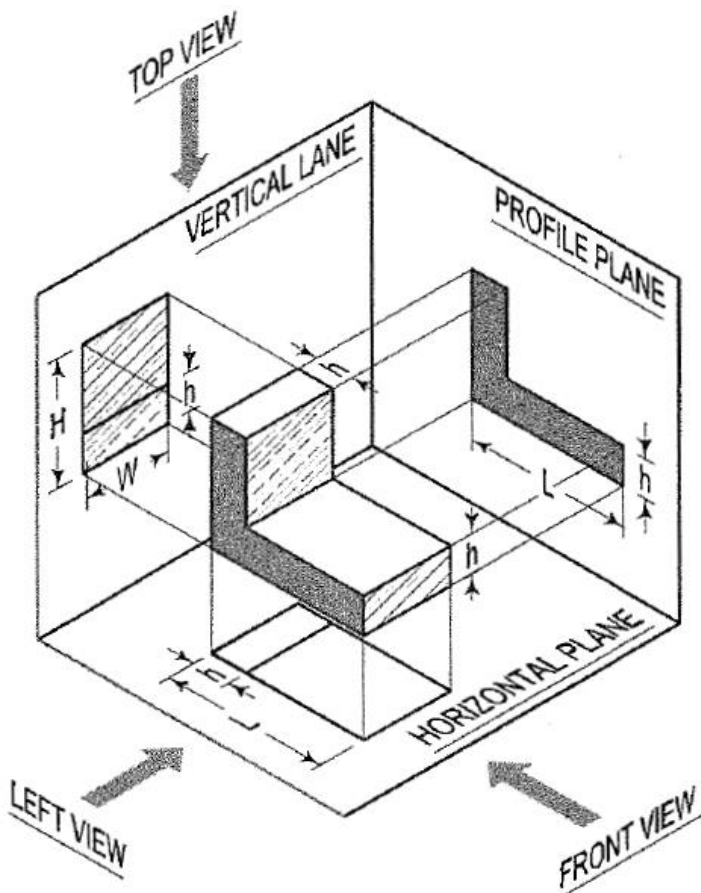
When the given object is in the first quadrant, its front view appears in the imaginary vertical plane V.P. behind it while its top view appears in an imaginary horizontal plane, H.P. below. The side view appears to the right or left of the front view depending on from which side the object is being viewed.

- (i) Mark the visible corners of the given block as shown

Drawing front orthogonal view:

Assume that you are viewing the object in the direction of the arrow towards the imaginary V.P. What you will see is a rectangle of height H and width W on V.P. This will be the front view. To draw this view:

- (ii) Draw a reference line xy , which represents the intersecting line of the planes V.P. and H.P. Draw a rectangle as shown W and H , above xy make sure that the width is parallel to the line xy . The rectangle is the front orthogonal view of the object.
- (iii) Draw a line parallel to and thickness of h to the line 1-2. The rectangle 1-2-4-3 is the front view of the horizontal L-shaped stem of the object.



Drawing top orthogonal view:

Now, if you look the object from the top, you will see a rectangle of length L and width W on the horizontal plane. This is the top view of plan of the object. To draw this view:

- (iv) Draw vertical projectors from 1 and 2 and extend them beyond the line xy . Draw a line 9-10 below and parallel to the reference line xy . Draw the lines 9-3 and 10-4 equal to the length L of the object. Join line 3-4. The rectangle 9-10-3-4 is the top view of the object.
- (v) Draw a line 11-12 parallel to and below 9-10 of thickness h . The rectangle 9-11-12-10 is the view of the vertical stem of the object.

Drawing the side orthogonal view:

Now if you look at the object from the left side, what you will see is an L-shaped image having a length of L and height of H on the auxiliary plane, AP . This view appears adjacent and to the right of front view. To draw this view:

- (vi) Draw a reference vertical line MN at right angles to xy cutting it at P . From P draw a construction line at 45° in the fourth quadrant.
- (vii) Project lines from the points 10, 12 and 4 of the top view to meet this inclined line at $10'$, $12'$ and $4'$.
- (viii) Project lines from points 2, 4 and 12 from the front view parallel to line xy . From points $10'$, $12'$ and $4'$ project lines vertically upwards to meet these horizontal projections.
- (ix) Join points 5-1-3-7-11-9. This will be the side view of the object.