**S.3 Holiday Work (Technical Drawing)**

- **ATTEMPT ALL QUESTIONS**

1.     (a)     Draw a triangle having been given the following data:
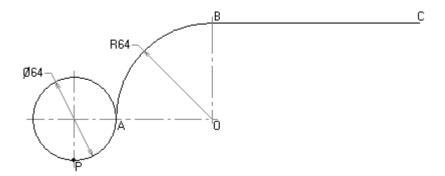
    The base as 100mm

    One base angle as $48^0$ and,

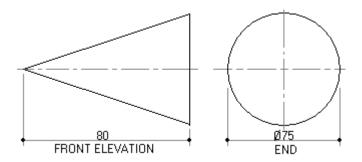    The sum of the two remaining sides as 235mm.

    (b)     Reduce the triangle drawn to $^4/_6$ its original side.

2.     The figure below shows a view of a right circular cylinder which rolls along

the surface ABC without slipping. Plot the locus of point P on the circumference of the cylinder when the cylinder makes one revolution.
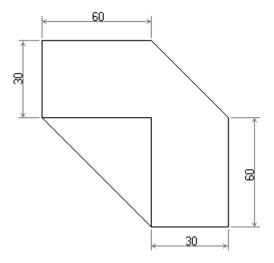


3.     The front and end views of a cone are shown in the figure below.
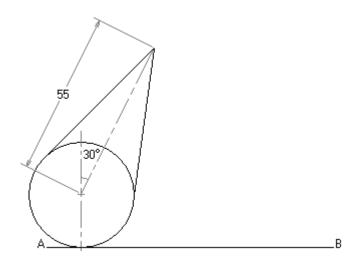
Draw its conical spiral.



4.     The base of a triangle is given as 80mm, the base angle BAC = $80^0$ and the sum of the two remaining sides of the triangle is given as 150mm.

    (a)     Draw the triangle.

(b)     Divide the triangle into two equal areas.

5.      The figure below shows a view of a wall bracket.

(a)     Draw the given view.

(b)     Construct a similar view whose area is in the ratio of 4:5.
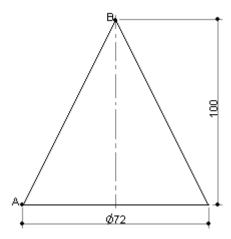


6.      A roller of diameter 50mm is attached to a point R as shown in the figure below. Draw the locus of R as the roller rolls for $360^0$ without slipping along the straight line AB in the clockwise direction.



7.      The figure below shows a right cone, draw the:

(a)     Archimedean spiral from A to B.

(b)     Complete plan.

(c)     Development of the cone including the spiral.



8.      Shown in the figure below is a piece of string BC equal in length to the circumference of a cylinder, around which it is to be coiled in a clockwise direction.

(a)     Plot the path of end C of the string as it coils round the cylinder for a complete loop.
                                                                (13 marks)

(b)     Name the curve you have drawn.                          (02 marks)

(c)     Draw a tangent and a normal at any point on the curve.  (10 marks)