



$$\therefore AC^2 = \boxed{\phantom{00}} + 576$$

$$\therefore AC = \boxed{\phantom{00}}$$

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2) If  $\sin \theta = \frac{4}{5}$  then find  $\cos \theta$

Sol. :  $\sin \theta = \frac{4}{5}$

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$\therefore \boxed{\phantom{00}} + \cos^2 \theta = 1$$

$$\therefore \boxed{\phantom{00}} + \cos^2 \theta = 1$$

$$\therefore \cos^2 \theta = 1 - \frac{16}{25}$$

$$\therefore \cos^2 \theta = \frac{25-16}{25}$$

$$\therefore \cos^2 \theta = \boxed{\phantom{00}}$$

$$\therefore \cos^2 \theta = \boxed{\phantom{00}}$$

3) Complete the following table :-

Types of triangle	Scalene Triangle	Acute angled triangle	Right angled triangle	Obtuse angled triangle
Position of incentre	Inside the triangle	-----	Inside the triangle	Inside the triangle
Position of Circumcentre	-----	Inside the triangle	-----	-----

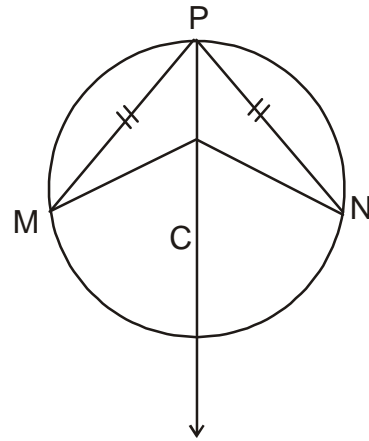
**B) Solve any four of the following questions :-**

- Find the value of  $\sin^2 45^\circ + \sin^2 30^\circ + \sin^2 60^\circ$ .
- The perpendicular height of a cone is 12cm and its slant height is 13cm. Find the radius of the base of the cone.
- Which of the equations given below have graph parallel to the x-axis and which one have graphs parallel to the y-axis?
  - $x = 3$
  - $y - 2 = 0$
  - $x + 6 = 0$
  - $y = -5$
- Radius of a circle is 34cm and the distance of the chord from the centre is 30 cm. Find the length of the chord
- Perimeter of a parallelogram is 150 cm. One of its sides is greater than the other by 25 cm Find lengths of all sides.

**Q. III A) Perform any one of the following activities.**

(3)

- 1) Seg PM and Seg PN are congruent chords of a circle with centre C. Show that the ray PC is the bisector of  $\angle NPM$



Proof :-

Draw Seg CM and Seg CN.  
 In  $\triangle CPM$  &  $\triangle CPN$ ,  
 Seg PM  $\cong$  seg  ---- given  
 Seg PC  $\cong$  seg PC -   
 Seg CM  $\cong$  seg CN -   
 $\therefore \triangle CPM \cong \triangle CPN$  -   
 $\therefore \angle CPM \cong$   - (c.a.c.t.)  
 $\therefore$   is the bisector of  $\angle NPM$ .

- 2) In the right angled  $\triangle LMN$ , if

$$N = \theta, \angle M = 90^\circ, \text{ and } \cos \theta = \frac{24}{25}$$

Find  $\sin \theta$  and  $\tan \theta$

Solution -  $\cos \theta = \frac{24}{25} = \frac{MN}{LN}$  ----- (1)

Let MN be 24k, then  
 $LN = 25 K$  -----(2)

In the right angled  $\triangle LMN$ , by Pythagoras theorem,

$$LN^2 = LM^2 + MN^2$$

$$\therefore \text{input} = LM^2 + (24K)^2$$

$$\therefore \text{input} = LM^2 + 576K^2$$

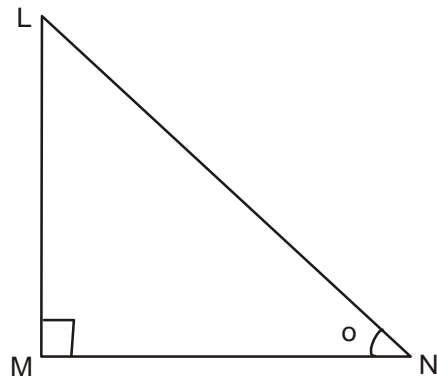
$$625K^2 - 576K^2 = LM^2$$

$$\therefore LM^2 = \text{input}$$

$$LM = \text{input}$$

$$\therefore \sin \theta = \frac{LM}{LN} = \text{input}$$

$$\& \tan \theta = \frac{LM}{LN} = \text{input}$$

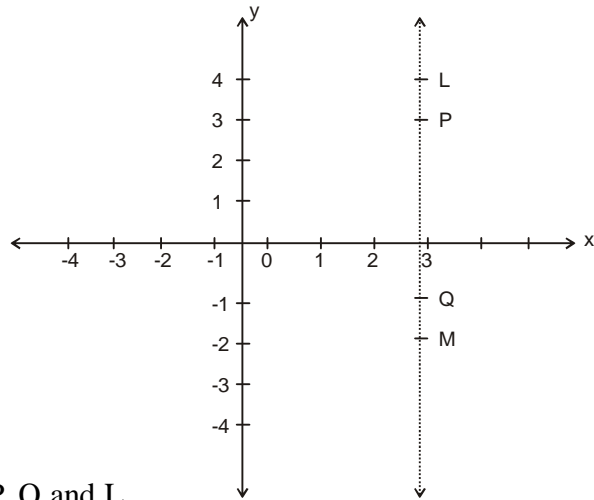


**B) Solve any two of the following :-**

**(6)**

1) Prove that "the segment joining the centre of a circle and the midpoint of its chord is perpendicular to the chord".

2) In the graph alongside, line M is Parallel to the y - axis

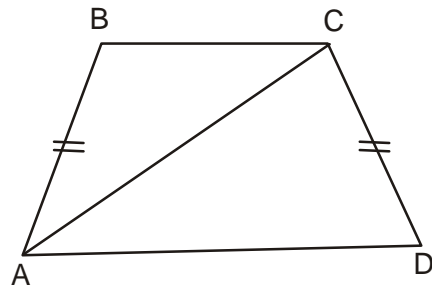


i) What is the distance of line LM from the y-axis ?

ii) Write the coordinates of the points P, Q and L

iii) What is the difference between the x coordinates of the points L and M?

3) In  $\square ABCD$ ,  
 side BC  $\perp$  side AD  
 side BC  $\parallel$  side AD  
 and if  
 side BA  $\cong$  side CD  
 then prove  
 that  $\angle ABC \cong \angle DCB$



**Q. IV Solve any two of the following :-**

**(8)**

1) Construct incircle and circumcircle of an equilateral  $\triangle DSP$  with side 7.5 cm. Measure the radii of both the circles and find the ratio of radius of circumcircle of the radius of incircle.

2) Draw the graphs of the equations given below.

i)  $3x - y = 0$

ii)  $2x + y = 1$

3) In a field, dry fodder for the cattle is heaped in a conical shape. The height of the cone is 2.1m and diameter of base is 7.2m. Find the volume of the fodder. If it is to be covered by polythene in the rainy season, then how much minimum polythene sheet is needed?

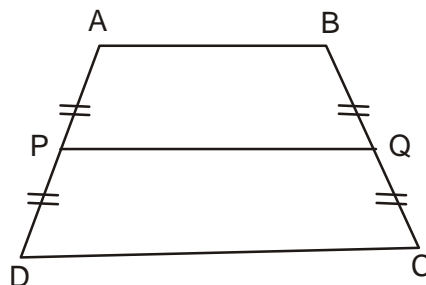
$(\pi = \frac{22}{7} \text{ and } \sqrt{17.37} = 4.17)$

**Q. V Solve any one the the following :**

**(3)**

1) There are 25 persons in a tent, which is conical in shape. Every person needs an area of  $4\text{m}^2$  of the ground inside the tent. If the height of the tent is 18m, find the amount of air inside the tent.

2) In  $\square ABCD$ ,  
 seg AB  $\parallel$  seg DC,  
 P and Q are the midpoints of sides AD and BC respectively and PQ = 10 cm.



i) Find the length of seg AB and seg CD.

ii) Under what condition will AB, PQ and DC be all equal? Hence identify the type of quadrilateral so formed.

