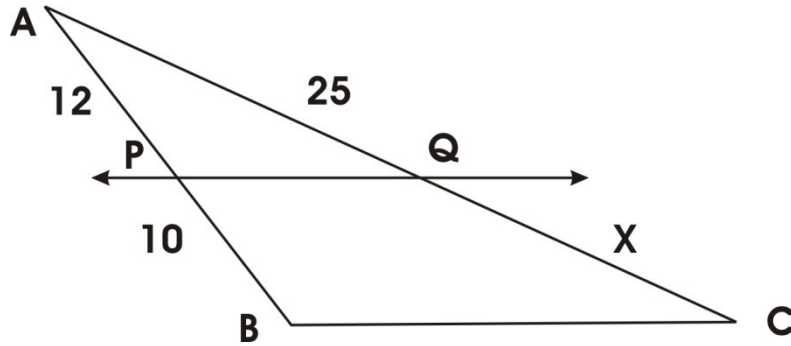
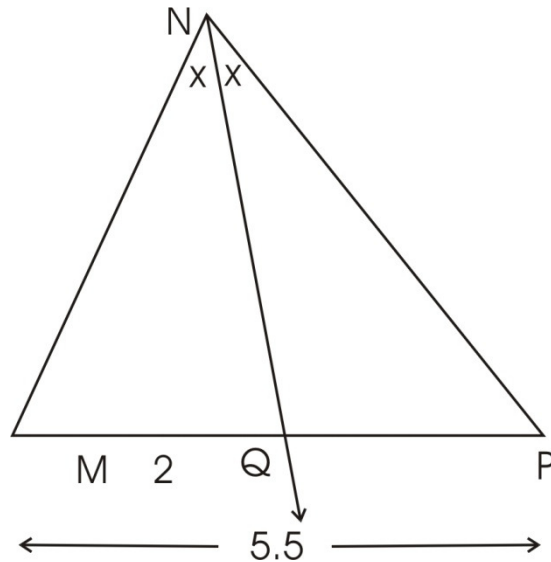


**Q1 Solve the following:**

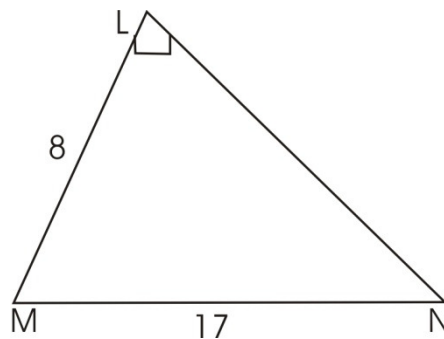
- 1] In  $\triangle ABC$  line  $PQ \parallel BC$ , Find the value of  $x$  from the information given in the figure.



- 2] In  $\triangle MNP$ ,  $NQ$  is the bisector of  $\angle MNP$  and  $MQ=2$ ,  $MP=5.5$  find  $MN$ ;  $NP$



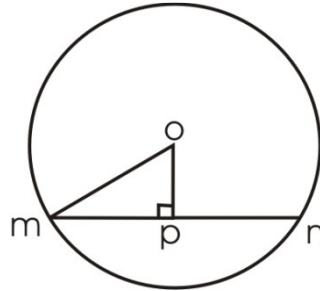
- 3]  $\triangle ABC \sim \triangle PQR$  and  $A(\triangle ABC) = 81\text{cm}^2$  if  $AB=6\text{cm}$ ,  $PQ=12\text{cm}$  then find  $A(\triangle PQR)$
- 4] Using the information given in the figure find  $LN$ .



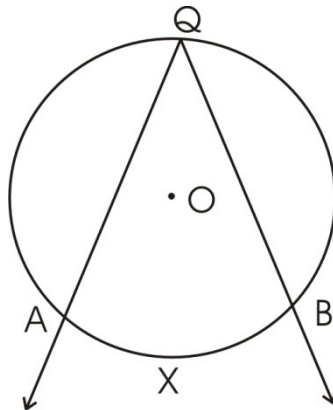
- 5] If the sides of a rectangle are 9cm and 40cm, find the length of its diagonal.

**Q2 Solve the following**

- 1] Find the length of a chord which is a distance of 6 cm from the centre of a circle whose radius is 10cm
- 2] In the figure seg  $op \perp$  chord MN  $om = 41$   $mn=80$  find  $op$



- 3] Distance of chord EF from the centre of a circle is 12cm. If the length of chord EF is 32cm Find the diameter of the circle.
- 4] Diameters of the two internally touching circles are 26cm and 14cm. Find the distance between the centers.
- 5] In the figure if  $\angle AQB = 59^\circ$ ; then find  $m(\text{arc AXB})$



Q3 Solve the following

- 1] Find the value of each of the following:
  - a)  $\sin 45^\circ \times \cos 45^\circ - \sin 30^\circ$
  - b)  $\cos 60^\circ \times \cos 30^\circ + \sin 60^\circ \times \sin 30^\circ$
- 2] Show that LHS = RHS in each of the following
  - a)  $\cos 60^\circ = 2\cos^2 30^\circ - 1$
  - b)  $\sin^2 45 + \cos^2 45 - \tan^2 45 = 0$
- 3] A boy at a distance of 60m from a tree makes an angle of elevation of  $60^\circ$  with the top of the tree. What is the height of the tree?

Q4 Solve the following:

- 1] Draw segment AB of length 6.5 cm. Draw the perpendicular bisector of segment AB.
- 2] Draw the circum circle of  $\triangle DEF$  in which  $DE=6.2\text{cm}$ ,  $\angle EDF=65^\circ$   $\angle DEF=50^\circ$
- 3] Construct the in circle of  $\triangle BDS$  in which  $DS=5\text{cm}$ ,  $\angle BDS=50^\circ$  and  $\angle DSB=60^\circ$
- 4] Draw a tangent at any point m to the circle with centre O and radius 2.5cm
- 5] Draw a circle with centre P and radius 3cm Draw tangents to the circle from a point A Such that  $d(P,A) = 7.5\text{ cm}$

Q5 Solve the following:

- 1] The radius and height of a cylinder are given. Find its total surface area (  $\pi = \frac{22}{7}$  )
  - a)  $r= 7\text{cm}$ ,  $h= 15\text{cm}$
  - b)  $r= 28\text{cm}$ ,  $h= 12\text{cm}$
- 2] The curved surface area of sphere is  $616\text{cm}^2$  find its radius and diameter.
- 3] The volume of a cylindrical milk can is  $3080\text{cm}^3$  if its height is 20cm find the radius of the milk can.
- 4] The following data indicate the number of students using different modes of trans port.

Represent the above data using a pie diagram.

Mode of transport	Bicycle	Bus	Walk	Train	Car
Number of student	140	100	70	40	10

5] Given below is the distribution of profit (in ₹) per day of shops in a certain town:

Profit (in ₹ )	500 - 900	1000 - 1400	1500 - 1900	2000 - 2400	2500 - 2900	3000-3400	3500-3900
No of shops	8	18	27	20	21	18	8

Calculate median profit of the shops.