

Q I) A. Solve any 4 out of the following questions: 4

1) If A-B-C and  $d(A, C) = 11$ ,  $d(B, C) = 6$  then find  $d(A, B)$

2) In  $\triangle DEF$ ,  $m\angle D = 72^\circ$ ,  $m\angle E = 83^\circ$  and  $m\angle F = 25^\circ$  find out the greatest and the smallest side of the  $\triangle DEF$

3) The point N (-4.2, 3.5) lies on a line parallel to the X-axis. Write the equation of the line.

4) Write the following statement in if ----- then form. 'The opposite side of a parallelogram is congruent.'

5) Find the value of  $\sin 30^\circ + \cos 60^\circ$

6) 'The diagonals are congruent to each other' In which of the following quadrilaterals is the given property observed?

Parallelogram, Rectangle, Square, Rhombus.

Q1. B) Solve any two of the following : 4

1) The total surface area of a cone is  $704\text{sq.cm}$  & radius of its base is  $7\text{cm}$ . Find the slant height of the cone ( $\pi = \frac{22}{7}$ )

2) 1) Draw a circle with centre O and radius  $2.5\text{ cm}$   
Draw a chord AB of length  $4\text{cm}$

2) Draw OM perpendicular to chord AB

3) Measure length of seg AM and seg BM

4) Which property does it verify?

3) State in which quadrant or on which axis do the following points lie?

i) A(-4,3)

ii) C(0,-8)

iii) B(-7,-3)

iv) D(5,0)

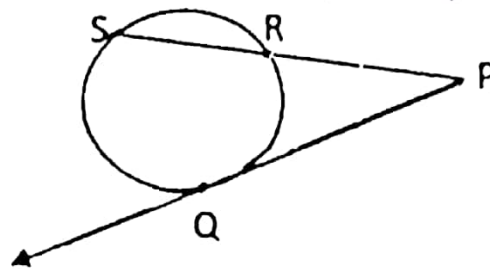
QII A] Choose the correct alternatives from the options given below. 4

- 1) The areas of two similar triangles are  $9\text{cm}^2$  and  $16\text{cm}^2$ . The ratio of their corresponding height is \_\_\_\_\_  
 a) 9:16 b) 3:4 c) 4:3 d) 16:9
- 2) Which of the following is not the test of similarity?  
 a) AAA test b) SAS test c) SAA test d) SSS test.
- 3) If two sides of the right angled triangle are 3 and 4, then the length of the third side is.  
 a) 5 b)  $\sqrt{7}$  c) 5 or  $\sqrt{7}$  d) none of these
- 4) Number of circles that can be drawn through 3 non-collinear points is \_\_\_\_\_  
 a) 1 b) 0 c) 2 d) 3

P.) Solve any 2 out of the following:

4.

- 1) In the fig, ray PQ touches the circle at point Q,  $PQ = 12$ ,  $PR = 8$  find PS and RS.

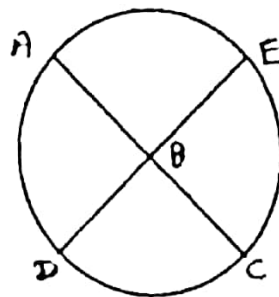


- 2) In the fig, chords AC & DE intersect at B.

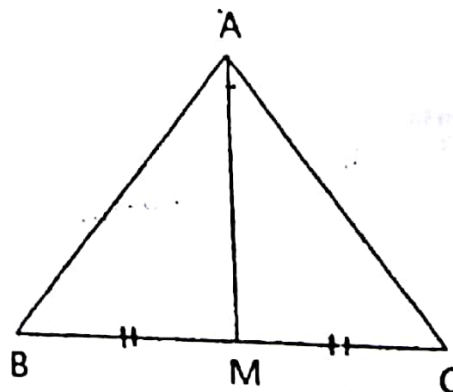
If  $\angle ABE = 108^\circ$

$m(\text{arc } AE) = 95^\circ$

find  $m(\text{arc } DC)$



- 3) In  $\triangle ABC$ , point M is the midpoint of side BC. If  $AB^2 + AC^2 = 290\text{ cm}^2$   $AM = 8\text{ cm}$ . Find BC



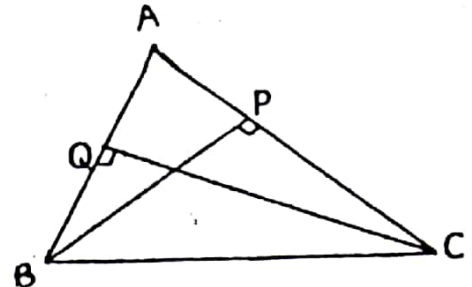
Q3) Solve any 2 of the following:

4M

1) If  $\Delta ABC \sim \Delta PQR$  and  $AB : PQ = 2 : 3$ , then fill in the blanks

$$\begin{aligned} \text{Soln: } \frac{A(\Delta ABC)}{A(\Delta PQR)} &= \frac{\square}{\square} \\ &= \frac{2^2}{3^2} \\ &= \frac{\square}{\square} \end{aligned}$$

2) In the fig,  $BP \perp AC$ ,  $CQ \perp AB$   
 $A-P-C$ ,  $A-Q-B$  then  
 Prove that  $\Delta APB$  and  $\Delta AQC$  are similar.



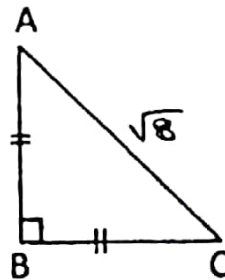
Sol: In  $\Delta APB$  and  $\Delta AQC$

$$\begin{aligned} \angle APB &= \square \text{ --- (1)} \\ \angle AQC &= \square \text{ --- (2)} \\ \angle APB &\cong \angle AQC \text{ ----- from 1 \& 2} \\ \angle PAB &\cong \angle QAC \text{ ----- } \square \\ \Delta APB &\sim \Delta AQC \text{ ----- } \square \end{aligned}$$

3) For finding AB and BC with the help of information given in the fig, complete the following:

Soln:  $AB = BC$  ----- Given

$$\begin{aligned} \angle BAC &= \square \\ AB = BC &= \square \times AC \\ &= \square \times \square \\ &= 2 \end{aligned}$$

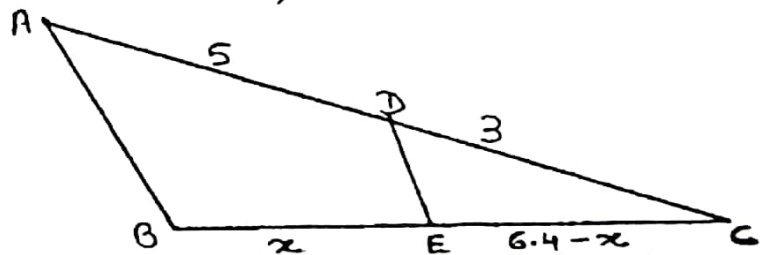


B) Solve any 2 out of the following :

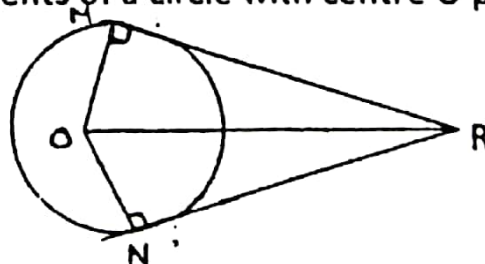
4M

1) Find the side and perimeter of a square whose diagonal is 10cm.

2) In the fig  $A-D-C$  and  $B-E-C$ ,  $\text{seg } DE \parallel \text{side } AB$ . If  $AD=5, DC=3, BC=6.4$  then find  $BE$ .



3) Seg  $RM$  and seg  $RN$  are tangent segments of a circle with centre  $O$  prove that seg  $QR$  bisects  $\angle MRN$  as well as  $\angle MON$ .



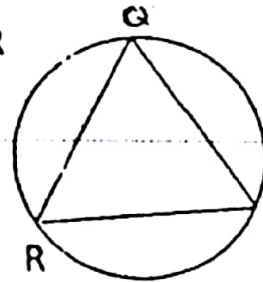
Q4) Solve any 3 out of the following :

9M

1. Draw a circle with radius 4.1 cm Construct tangents to the circle from a point at a distance 7.3cm from the centre.
2. Draw a circle with centre P and radius 3.4cm. Draw a chord MN of length 5.7 cm. Construct tangents at point M and N to the circle
3. Prove that the opposite angles of a cyclic quadrilateral are supplementary
4. In fig,  $\Delta QRS$  is an equilateral triangle prove that.

1.  $\text{Arc (RS)} \cong \text{arc QS} \cong \text{arc QR}$

2.  $m(\text{arc QRS}) = 240^\circ$



Q5. Solve any one of the following:

4M

1. O is the centre of a circle Point M in arc AMB is such that  $m(\text{arc AM}) = m(\text{arc MB})$  show that radius OM is perpendicular to chord AB.
2. In  $\Delta ABC$ ,  $AD \perp BC$ , if  $AD^2 = BD \cdot DC$  prove that  $\angle BAC = 90^\circ$

Q6. Solve any one of the following:

3M

- 1) Draw a circle with centre O & radius 4cm take any 4 point A, B, C, D on the circle Draw seg AB, BC, CD & DA. Produce seg AB, take a point E on it such that A-B-E now  $m\angle EBC$ . Draw your conclusion & write the statement of the theorem which is verified by the above activity.

- 2) Using  $5^2 + 6^2 = 61$  Draw a segment of length  $\sqrt{61}$ cm

