MATHS

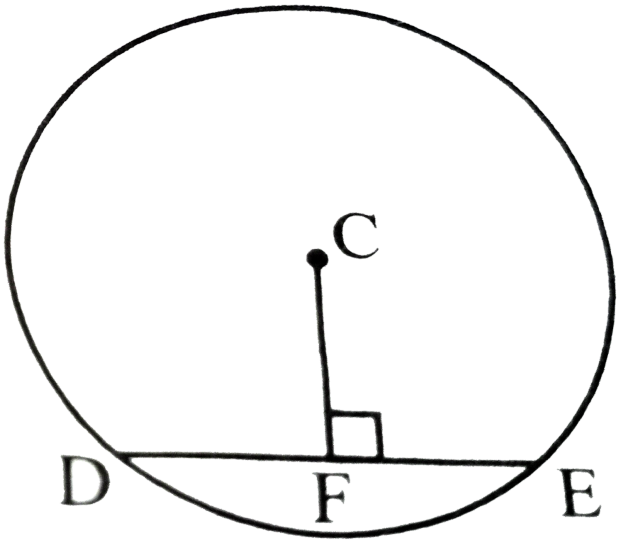
BOOKS - TARGET MATHS (HINGLISH)

CIRCLE

Examples

1. In the adjoining figure ,seg DE is a chord of a circle with centre C. seg CF $\perp$ seg DE. If diameter of the circle is 20cm, DE=16cm, find

CF. Recall and write theorems and properties which are useful to find the solution of the above problem. Using them solve the above problems.



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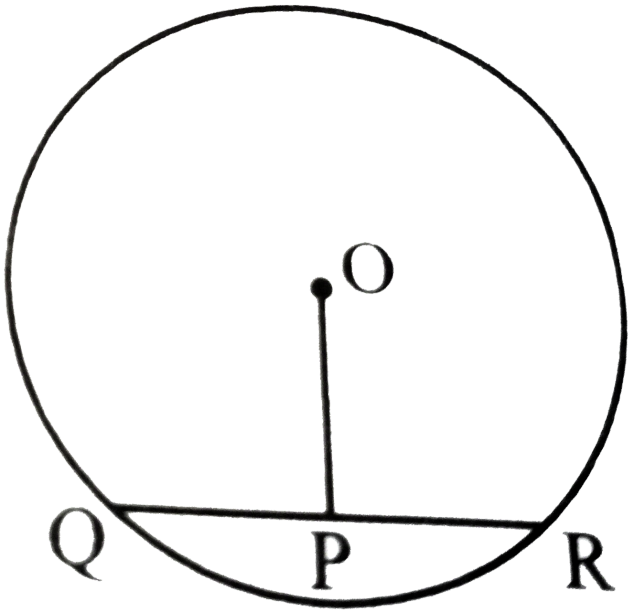
2. In the adjoining figure,seg QR is a chord of the circle with centre O. P is the midpoint of the chord QR. If QR=24, OP=10, find radius of the circle. To find solutions of the problem , write the theorems that are useful , Using them, solve the problem.



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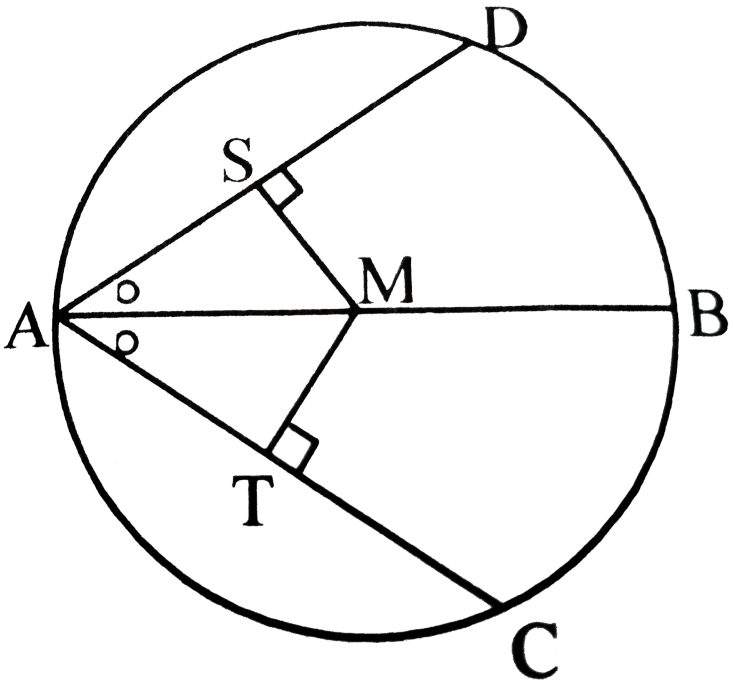
3. In the adjoining figure, M is the centre of the circle and seg AB is a diameter. Seg MS $\perp$ chord AD, seg MT $\perp$ chord AC, $\angle DAB \cong \angle CAB$.

Prove that : chord AD $\cong$ chord AC.



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4. If two equal chords of a circle intersect within the circle, prove that the segments of

one chord are equal to corresponding segments of the other chord.

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5. In the figure PQ is a diameter of a circle with centre O. QR is a tangent to the circle equal to OQ. OT is perpendicular to PR. QT is produced to cut the circle at S Prove that $SP = ST$

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Textual Activities

1. Draw a line segment AB, the length of which is 3 cm. Draw a circle with centre at A and with radius equal to AB. Tehn construct a tangent to that circle at the point B.

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2. Take two points $A\ and\ B$ on the page of your note book. Draw a circle with centre A which passes through B .

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3. How many circle can be draw to pass through two given points 1 (b) 2 (c) 0 (d) as many as possible

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4. There is one and only circle passing through three non-collinear points.

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5. There is one and only circle passing through three non-collinear points.

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6. Number of circles passing through 3 collinear points in a plane is .....

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7. To construct the tangents to a circle from a point outside it.

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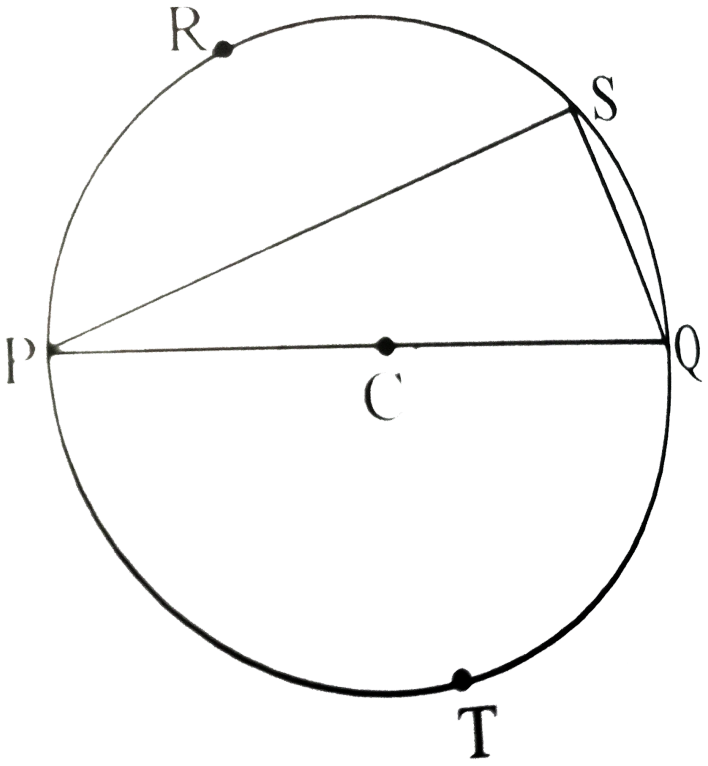
8. Draw a sufficiently large circle with centre C as shown in the figure. Draw any diameter PQ. Now take points R,S,T on both the semicircles. Measure $\angle PRQ = \angle PSQ$. What do you

observe?



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9. In the given figure two circles touch each other at the point C. Prove that the common tangent at P and Q.

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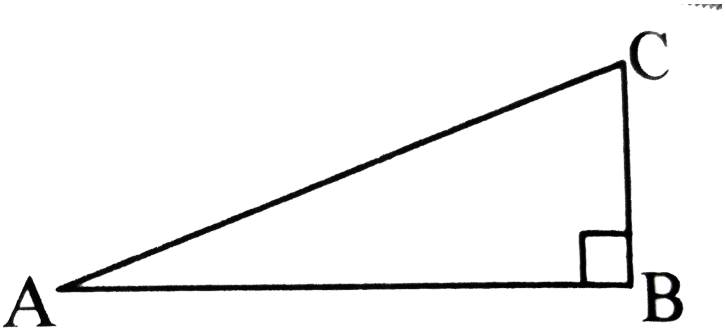
Lets Recall

1. Which theorem do we use in proving that hypotenuse is the longest side of a right

angled traingle?



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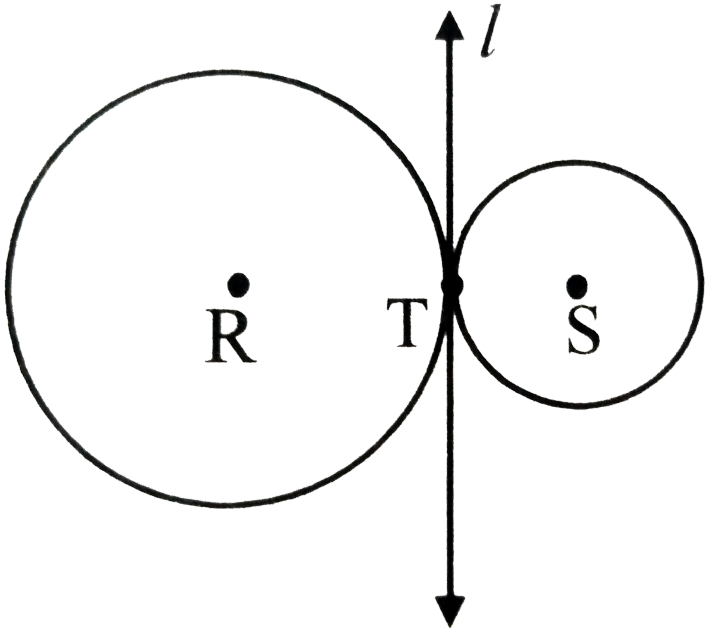
Try This

1. The circles shown in the given figure are called externally touching circles. Why?



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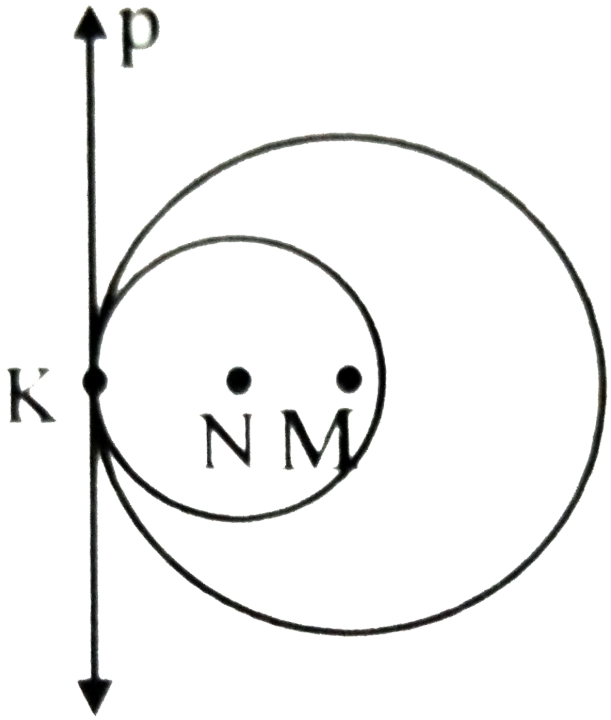
2. The circles shown in the given figure are called internally touching circles. Why?



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3. In the given figure ,

(i) the radii of the circles with centres A and B

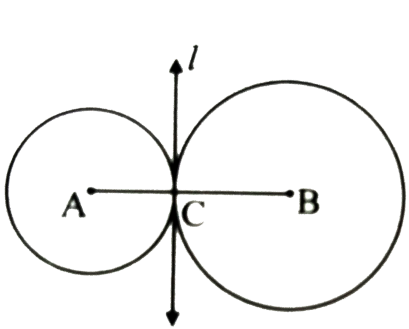
are 3cm and 4cm respectively.

(ii) the radii of the circles with centres A and B are 4cm and 3cm respectively.

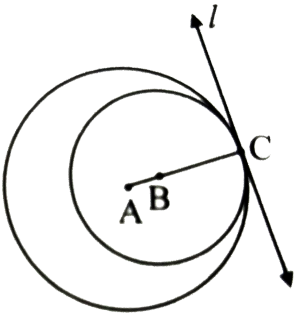
Find

(i) d(A,B) in figure (a)

(ii) d(A,B) in figure (b)



(a)



(b)

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4. If one angle of a triangle is equal to the sum of the other two,show that the traingle is right angled.

Hint.

$\angle A = \angle B + \angle C \Rightarrow \angle A + \angle B + \angle C + \ = 180^\circ$

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5. State Pythagoras theorem and its converse.

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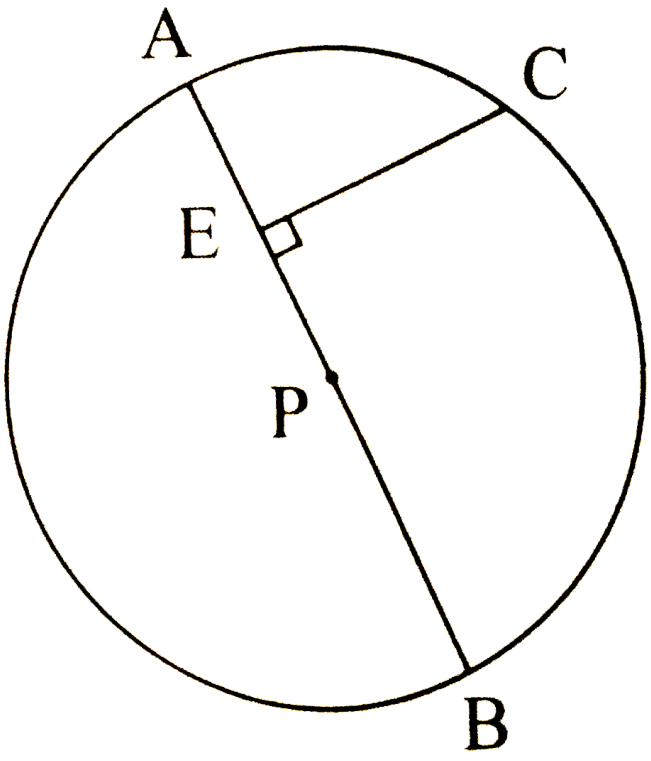

6.

In the above figure, seg AB is a diameter of a circle with centre P.C is any point on the circle. Seg CE $\perp$ seg AB. Prove that CE is the geometric mean of AE and EB. Write the proof with the help of folloing steps:

(a) Draw ray CE. It intersects the circle at D.

(b) Show that CE = ED.

Write the result using theorem of intersection of chords insides a circle.

(d) Using CE = ED, complete the proof.

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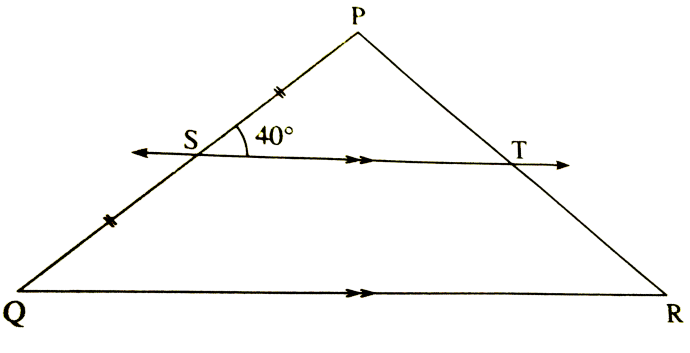
7.



In the figure , S is the midpoint of seg PQ . Line

ST || side QR and PT =5 cm , then find PR. Justify your answer.

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8. State and prove the Pythagoras theorem.

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Practice Set 3 1

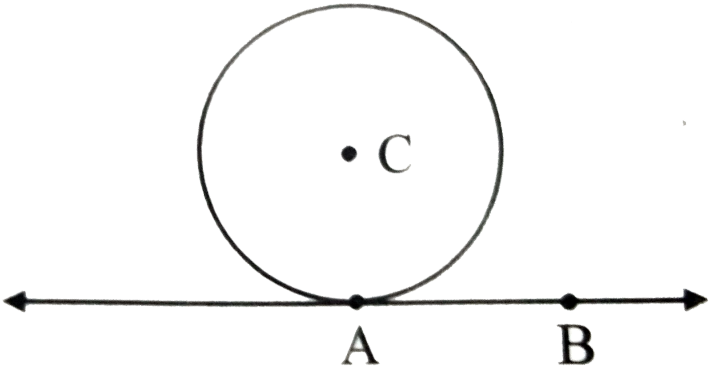
1. In the adjoining figure, the radius of a circle with centre C is 6cm , line AB is a tangent at A. Answer the following question

(i) What is the measure of $\angle CAB$? Why?

(ii) What is the distance of point C from line AB? Why?

(iii) d(A,B)=6cm, find d(B,C).

(iv) What is the measure of $\angle ABC$? Why?



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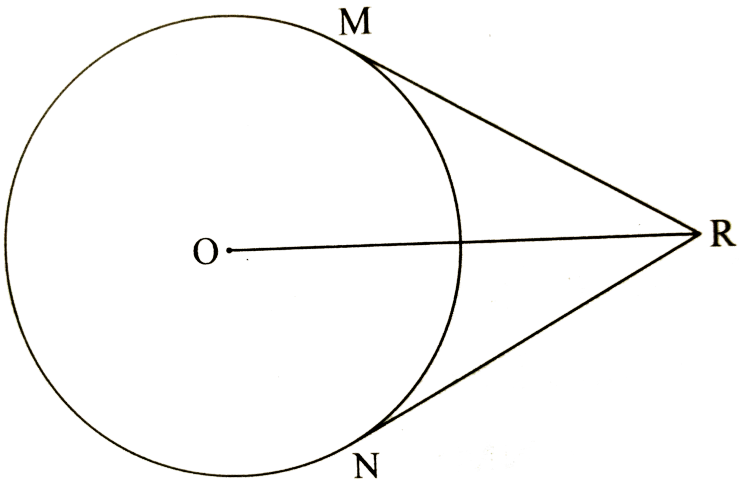
2. In the figure , O is the same of the circle. From point R, seg RM and seg RN are tangent segments touching the circle at M and N. If OR = 10cm and radius of the circle = 5 cm, then

(i) What is the length of each tangnet segment ?

(iii) What si the measure of $\angle MRO$?

(iii) Whatis the measure of $\angle MRN$?



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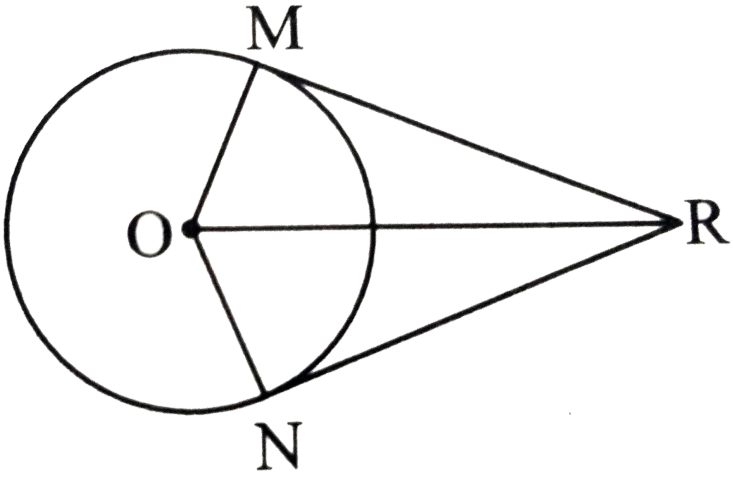
3. Seg RM and seg RN are tangents segments of a circle with centre O. Prove that seg OR

bisects $\angle MRN$ as well as $\angle MON$.



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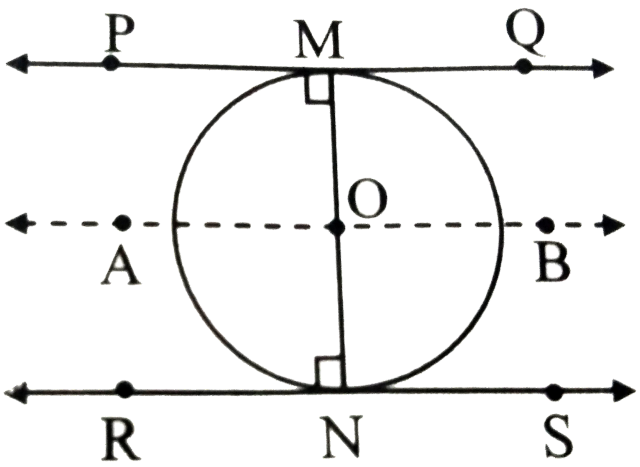
4. What is the distance between two parallel tangents of a circle having radius 4.5cm?

Justify you answer.



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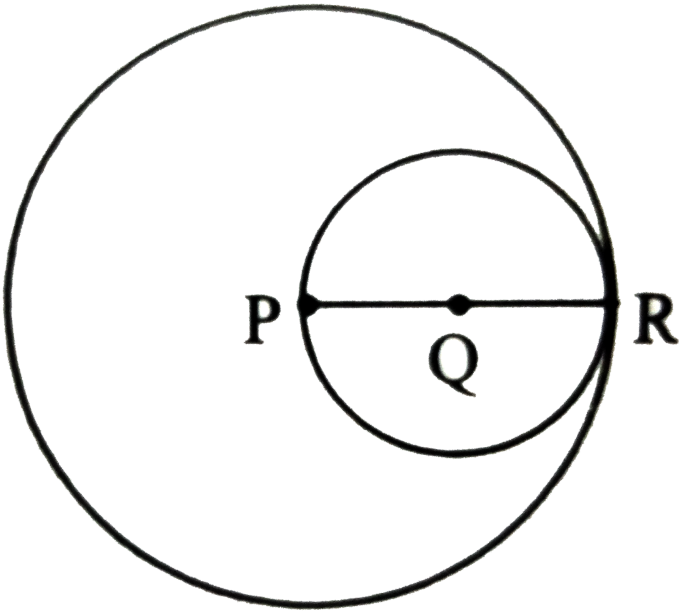
Practice Set 3 2

1. Two circles having radii 3.5cm and 4.8cm touch each other internally. Find the distance between their centres.



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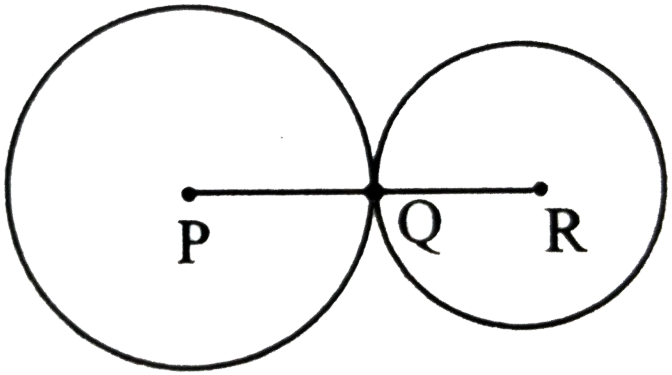
2. Two circles of radii 5.5cm and 4.2cm touch each other externally. Find the distance between their centres.



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3. If radii of two circles are 4cm and 2.8cm . Draw figure of these circles touching each

other

(i) externally

(ii) internally

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4. Like the adjoining figure, draw two circles with centres C and D which intersect each other at the points A and B . Draw a straight line through A which intersects the circle C at the point P and the circle with centre D at the

point Q. Prove that (i) $\angle PBQ = \angle CAD (ii) \angle BPC = \angle BQD.$

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5. Two circles with centres at A and B, touch at T. BD is the tangent at D and TC is a common tangent. AT has length 3 and BT has length 2. The length of CD is:

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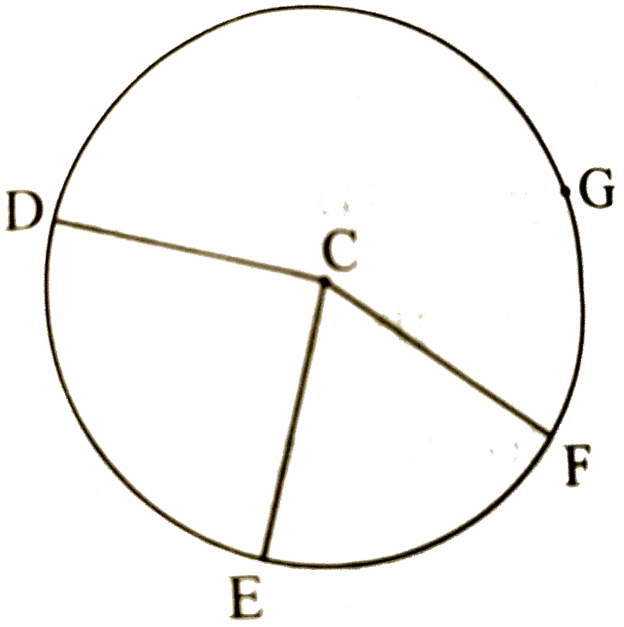
Practice Set 3 3

1. In the figure , points G,D,E,F are concyclic points of a cicle with centreC.

$\angle ECF = 70^\circ$

m (arc DGF) $= 200^\circ$,

find m(arc DE) and m(arc DEF) .



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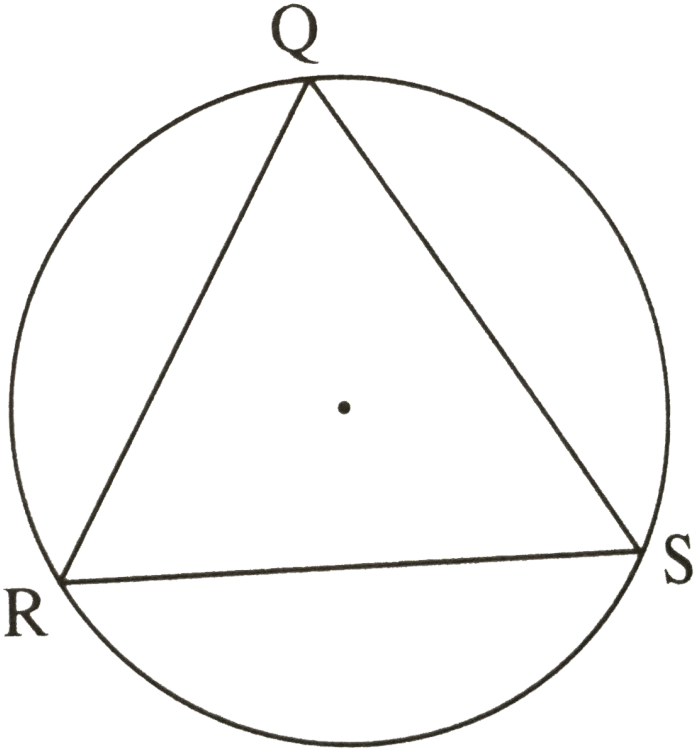
2. In figure, $\triangle QRS$ is an equilateral triangles. Prove that,

(1) $arcRS \cong arcQS \cong arcQR$

(2) $m(arcQRS) = 240^\circ$.



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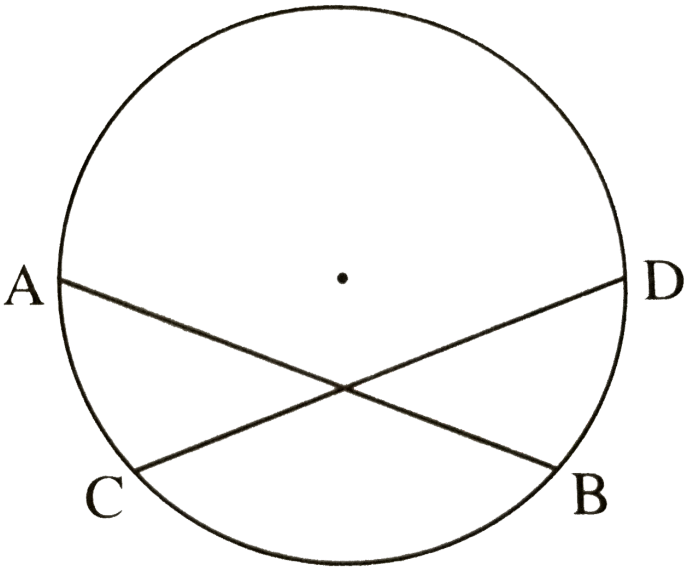
3. In figure, chord AB $\cong$ chord CD, Prove that, arc AC $\cong$ arc BD.



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Practice Set 3 4

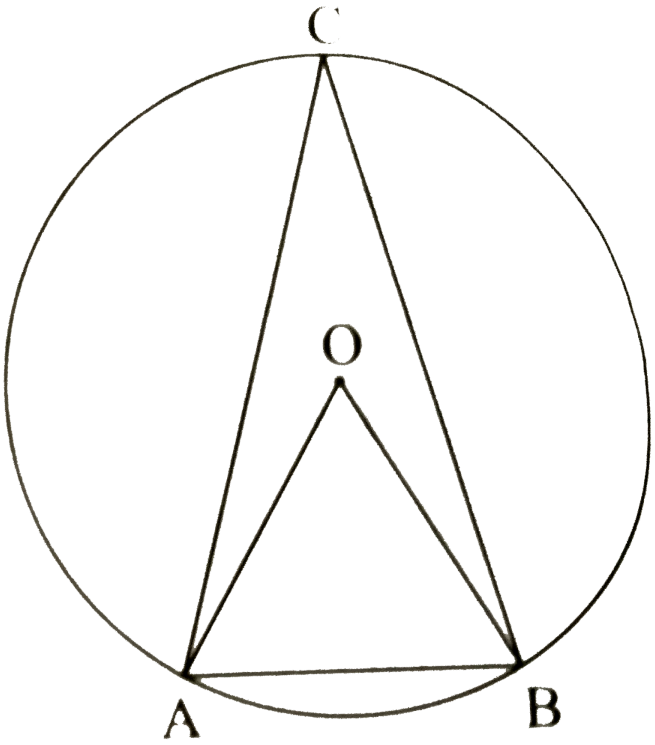
1. In the figure , in a circle with centre O, length of chord AB is equal to the radius of the circle. Find the measure of each of the following :

(1) $\angle AOB$

(2) $\angle ACB$

(3) arc AB

(4) arc ACB



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2. $\square MRPN$ is cyclic , $\angle R = (5x - 13)^\circ$, $\angle N = (4x + 4)^\circ$.Find measures of $\angle R$ and $\angle N$.

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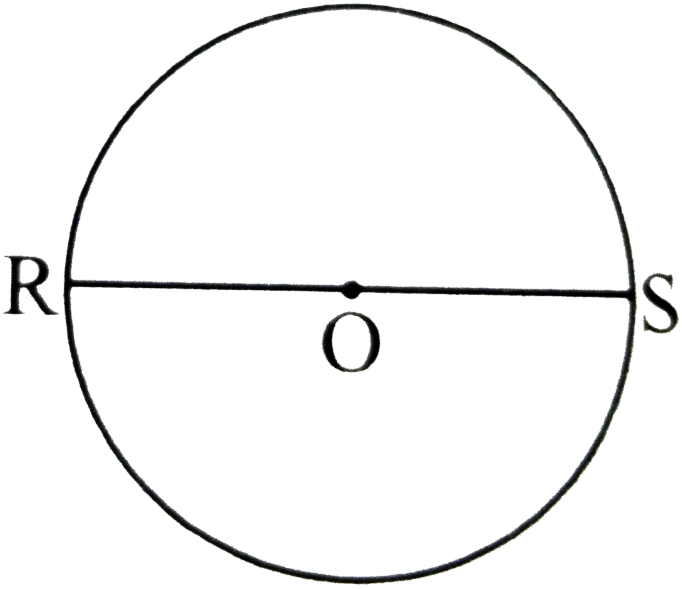
3. In the adjoining figure, seg RS is a diameter of the circle with centre O. Point T lies in the exterior of the circle. Prove that $\angle RTS$ is an

acute angle.



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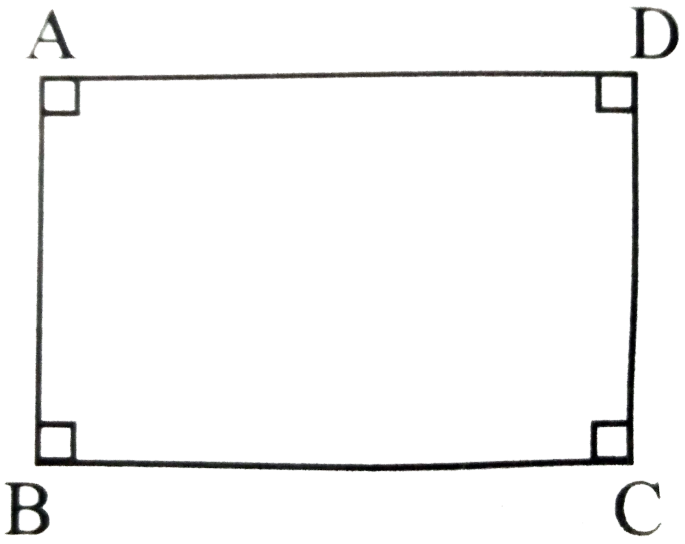
4. Prove that, any rectangle is a cyclic quadrilateral.



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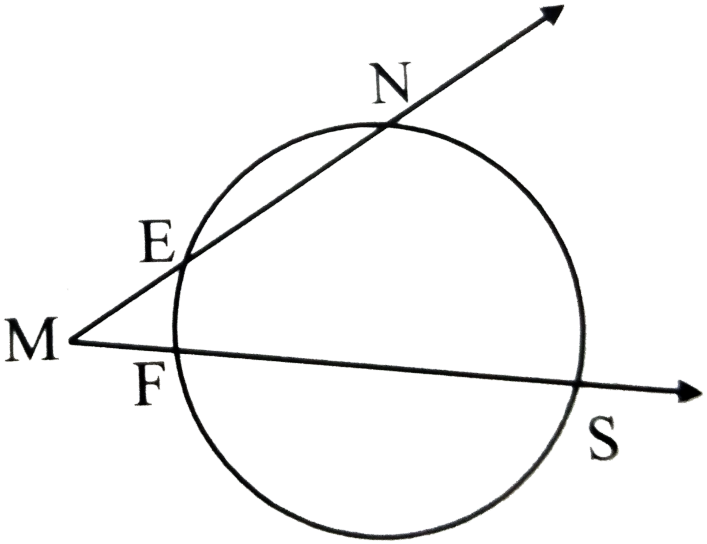
5. In the adjoining figure,m(are NS) $=125^\circ$,m (arc EF)$=37^\circ$, find the measure of $\angle$NMS.



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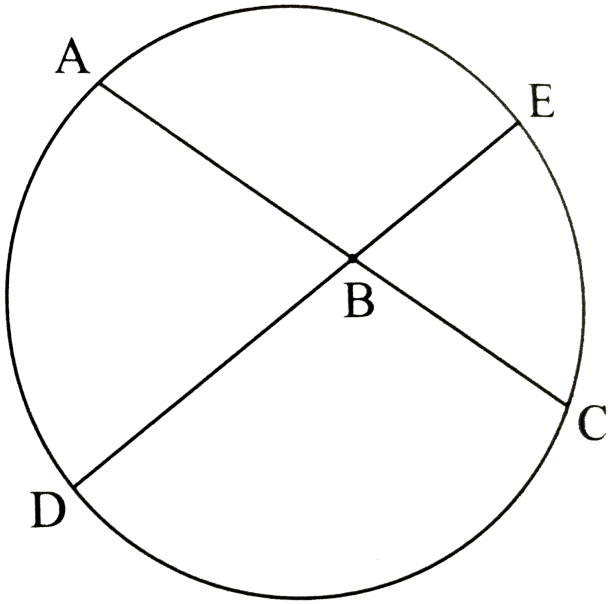
6. In the figure, chords AC and DE intersect at B. If $\angle ABE = 108^\circ$, m (arc AE) $= 95^\circ$, find m

(arc DC).



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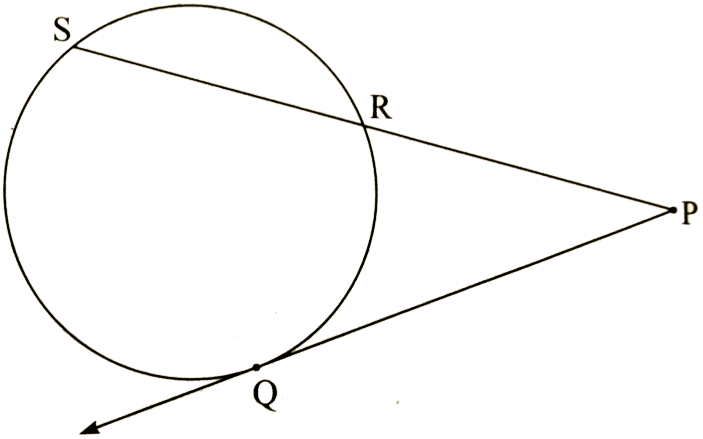
Practice Set 3 5

1. In the figure, ray PQ touches the circle at point Q. If PQ =12, PR = 8, then find PS.



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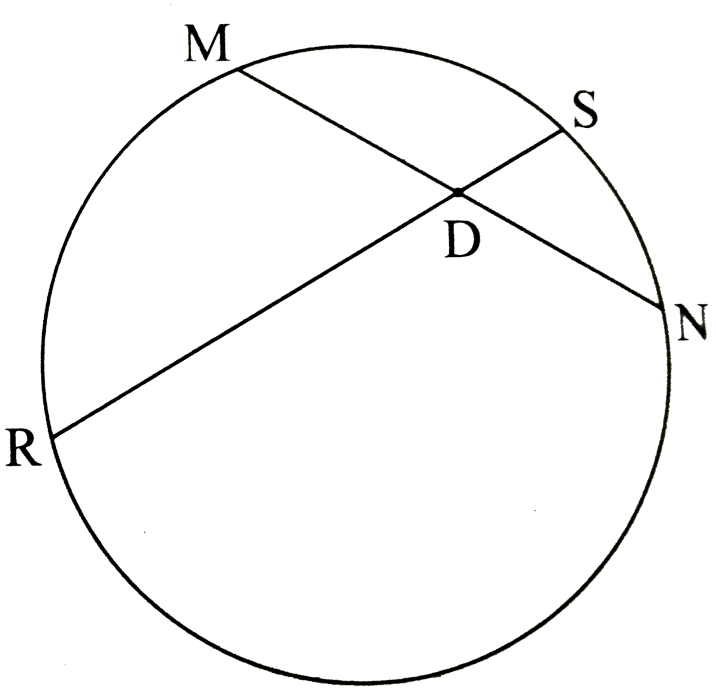
2. In the figure, chord MN and chord RS intersect at point D.

(1) If RD = 15, DS = 4, MD = 8 , find DN.

92) If RS = 18, MD = 9 , DN = 8 , find DS .



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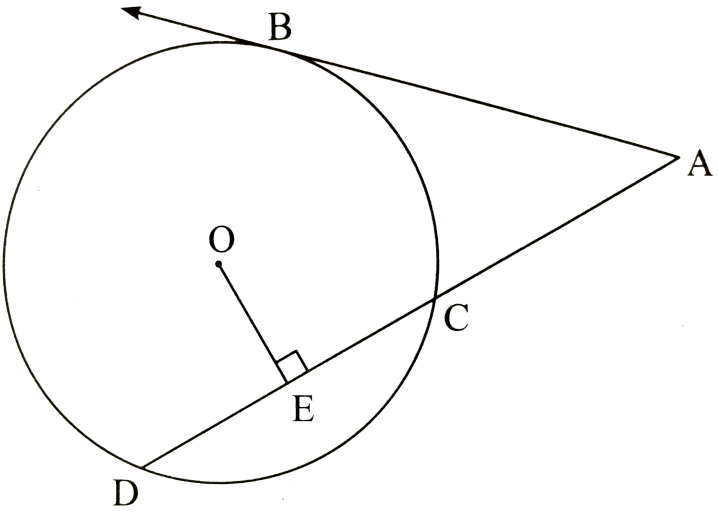
3. In the figure, O is the centre of the circle and B is a point of contact. Seg OE $\perp$ seg AD, AB = 12, AC = 8, find (i) AD (ii) DC (iii) DE.



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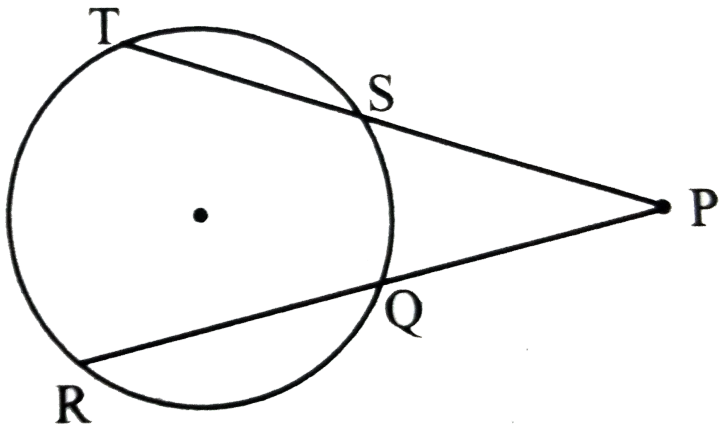
4. In the adjoining figure , if PQ=6,QR=10,PS=8 , find TS.



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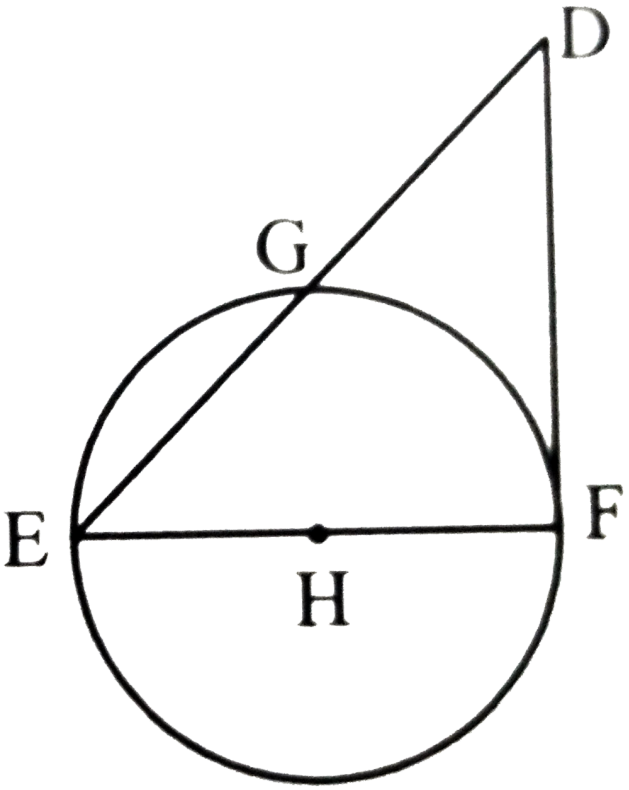
5. In the adjoining figure , seg EF is a diameter and seg DF is a tangent segment. The radius of

the circle is r. Prove that, $DE \times GE = 4r^2$.



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Problem Set 3

1. Two circles of radii 5.5 cm and 3.3cm respectively touch each other. What is the distance between their centre ?

A. 4.4cm

B. 8.8cm

C. 2.2cm

D. 8.8 or 2.2cm

Answer: D

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2. Two circle intersect each other such that each circle passes through the centre of the other. If the distance between their centres is 12 , what is the radius of each circle?

A. 6cm

B. 12cm

C. 24cm

D. can't say

Answer: B

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3. A circle touches all sides of a parallelogram.

So the parallelogram must be a

A. rectangle

B. rhombus

C. square

D. trapezium

Answer: B

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4. Length of a tangent segment drawn from a point which is at a distnace 12.5 cm from the centre of a circle is 12cm , find the diameter of the circle.

A. 25cm

B. 24cm

C. 7cm

D. 14cm

Answer: C

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5. If two circles touch externally , how many common tangents can be drawn to them ?

A. One

B. Two

C. Three

D. Four

Answer: C

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6. $\angle ACB$ is inscribed in arc ACB of a circle with centre O . If $\angle ACB = 65^\circ$, find m (arc ACB) .

A. 65°

B. 130°

C. 295°

D. 230°

Answer: D

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7. Chords AB and CD of a circle interset inside the circle at point E. If AE = 5.6 , EB = 10 cm , CE = 8 ,find ED.

A. 7

B. 8

C. 11.2

D. 9

Answer: A

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8. In a cyclic $\square$ ABCD, twice the measure of $\angle A$ is thrice the measure of $\angle C$. Find the measure of $\angle C$.

A. 36°

B. 72°

C. 90°

D. 108°

Answer: B

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9. Points A,B,C are on a circle, such that m(arc AB) = m (arc BC) $= 120^\circ$. No point, except point B, is common to the arcs. What type is the ΔABC?

A. Equilateral traingle

B. Scalene traingle

C. Right angled traingle

D. Isosceles traingle

Answer: A

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10. Seg XZ is a diameter of a circle. Point Y lies in its interor. How many of the followint statements are true?

(1) It is a not possible that $\angle XYZ$ is an acute angle.

(2) $\angle XYZ$ can't be a right angle

(3) $\angle XYZ$ is an obtuse angle.

(4) Can't make a dfinite statement for measure of $\angle XYZ$

A. Only One

B. Only two

C. Only three

D. All

Answer: C

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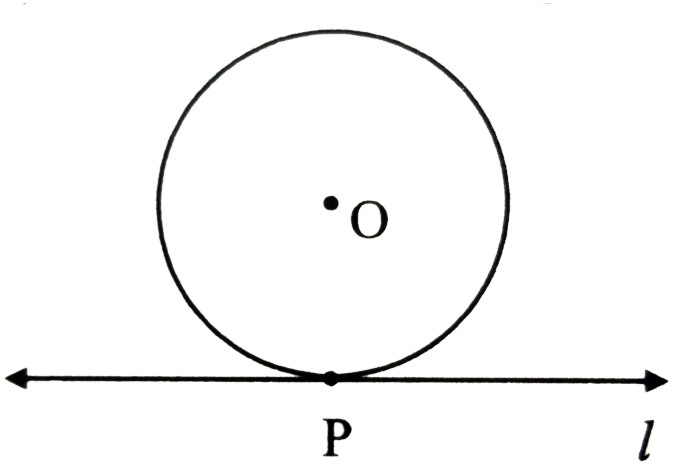
11. Line l touches a circle with centre O at point P. If radius of the circle is 9cm, answer the following.

(i) What is d(O,P)=? Why?

(ii) If d(O,Q)=8cm, where does the point Q lies

(iii) If d(O,R)=15cm, how many locations of point R are on line l? At what distance will

each of them be from point P?



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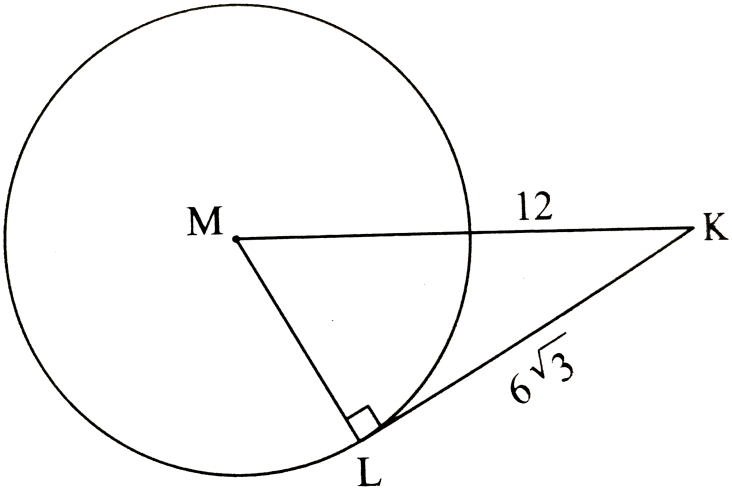
12. In the figure, M is the centre of the circle and seg KL is a tangent segment. If $MK = 12, KL = 6\sqrt{3}$ then find,

(1) Radius of the circle,

(2) Measures of $\angle K$ and $\angle M$.



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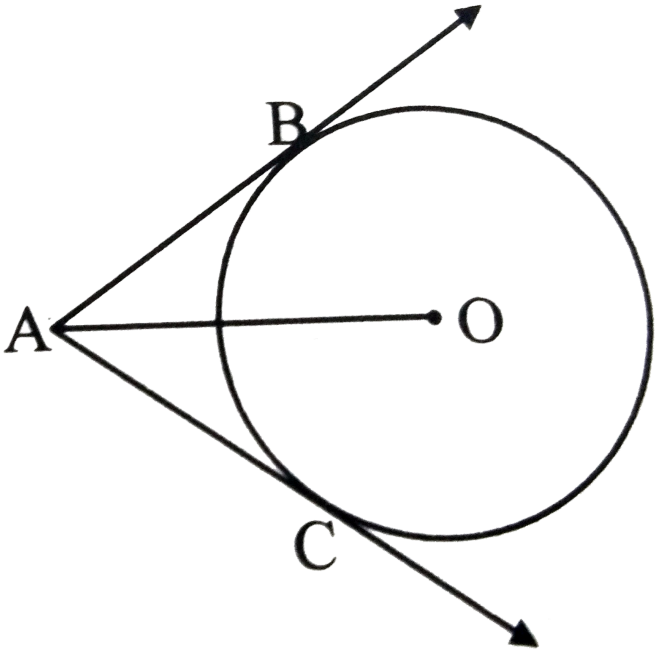
13. In the adjoining figure, O is the centre of the circle. Seg AB, seg AC are tangent segments. Radius of the circle is r and l(AB)=r.

Prove that , □ ABOC is a square.



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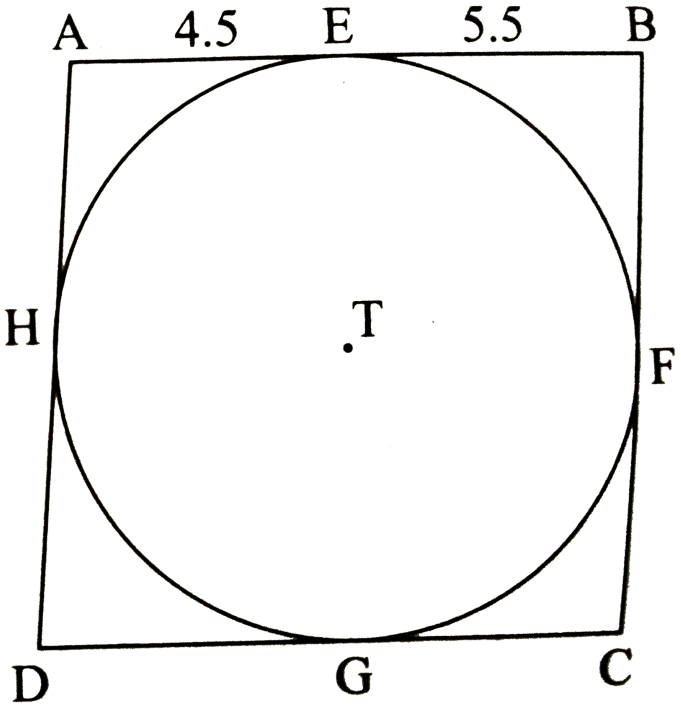
14. In the figure, □ $ABCD$ is a parallalogram.

It circumscribes the cirlcle with centre T. Point

E,F,G,H are touching points. If AE = 4.5 ,EB = 5.5 ,

find AD.



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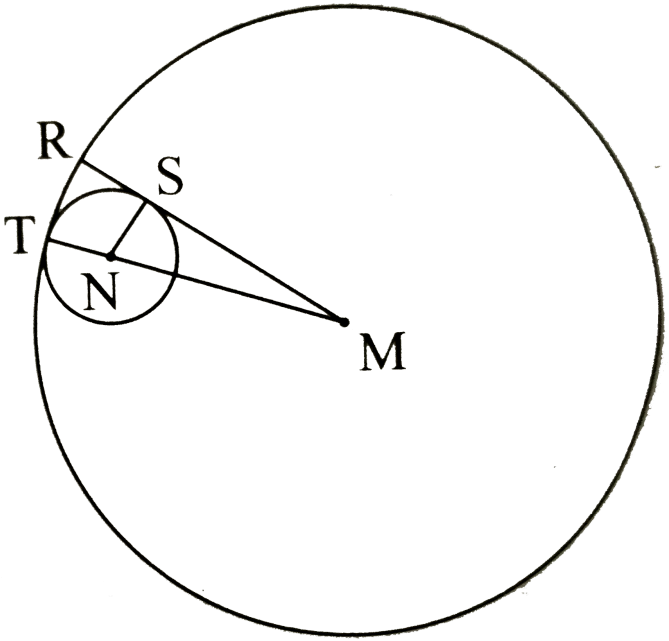
15. In the figure, circle with centre M touches the circle with centre N at point T. Radius RM touches the smaller circle at S. Radii of circles are 9 cm and 2.5 cm. Find the answers to the following questions hence find the ratio MS : SR

(1) Find the length of segment MT

(2) Find the length of seg MN

(3) Find the measure of $\angle NSM$.



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16. Two circles intersect each other at the points P and Q. Two straight lines through P

and Q intersect one circle at the points A and C and the other circle at B and D. Prove the AC|| BD

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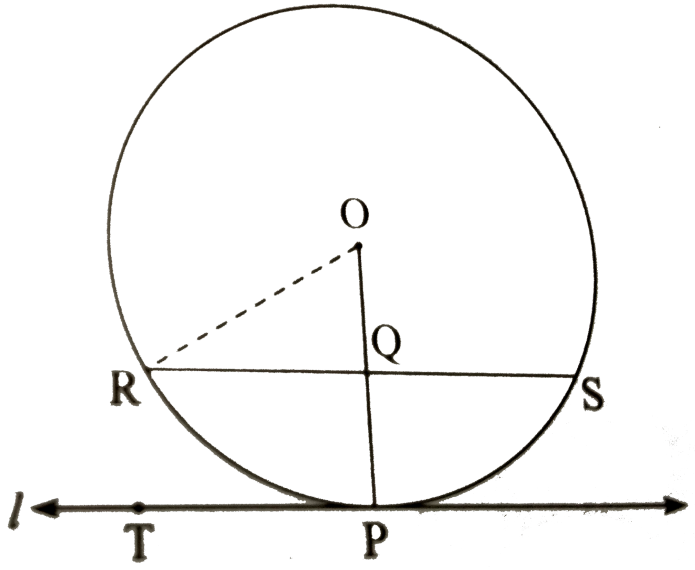
17. In the figure, line l touches the circle with centre O at point P. Q is the midpoint of radius OP. RS is a chord thorugh Q such that chords RS || line l. If RS = 12 , find the radius of the

circle.



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18. Prove the any three points on a circle cannot be collinear .

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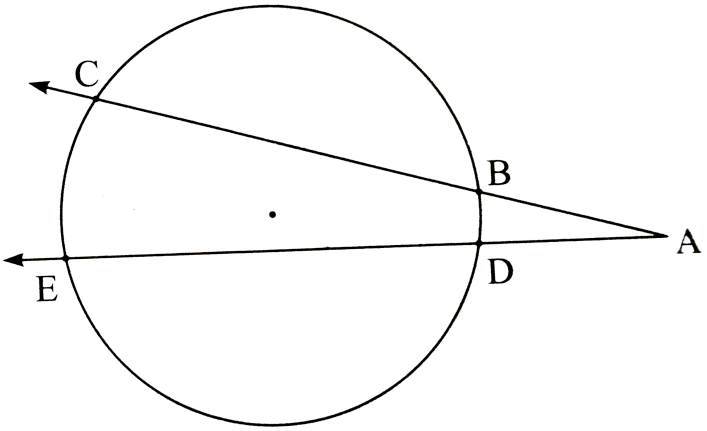
19. In the figure,

(1) m (arc CE) $= 54^\circ$, m (arc BD) 23°, find measure of $\angle CAE$.

(2) If AB = 4.2 , BC = 5.4 , AE = 12.0, find AD .

(3) If AB = 3.6, AC = 9.0 , AD = 5.4 , find AE.



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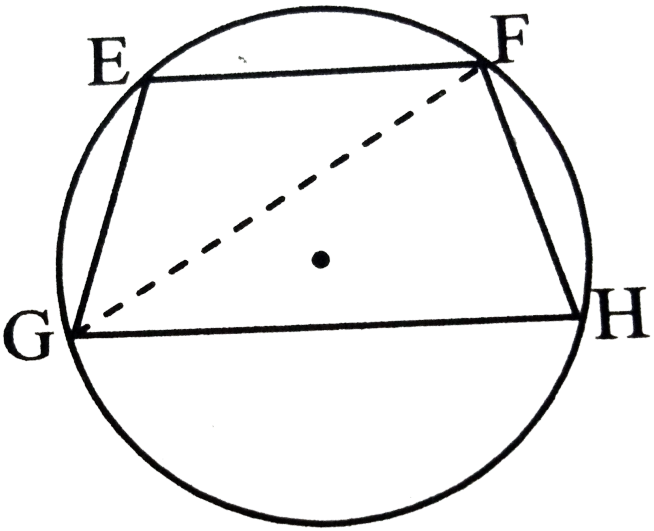
20. In the adjoining figure ,chord EF || chord GH. Prove that, chord EG $\cong$ chord FH. Fill in the blanks and write the proof.



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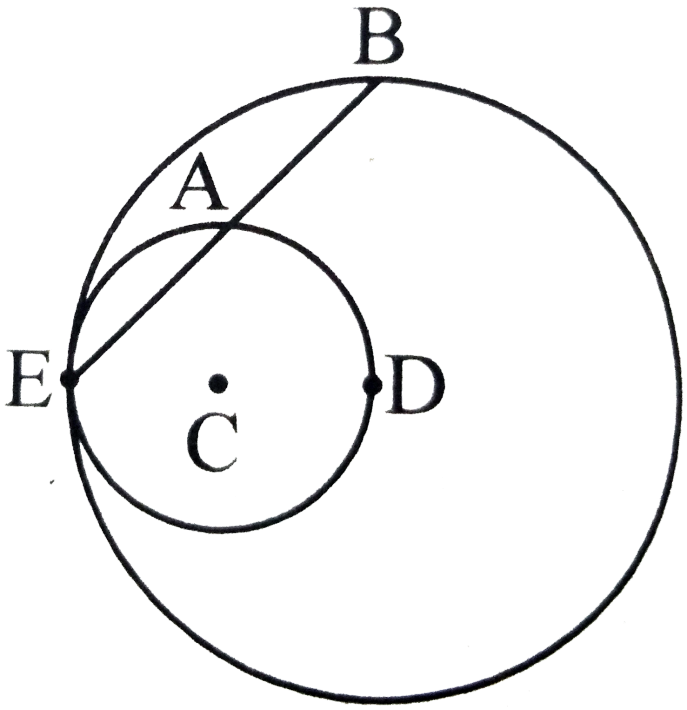
21. In the adjoining figure , circles with centres C and D touch internally at point E. D lies on the inner circle. Chord EB of the other circle intersects innet circle at point A. Prove that, seg EA $\cong$ seg AB.



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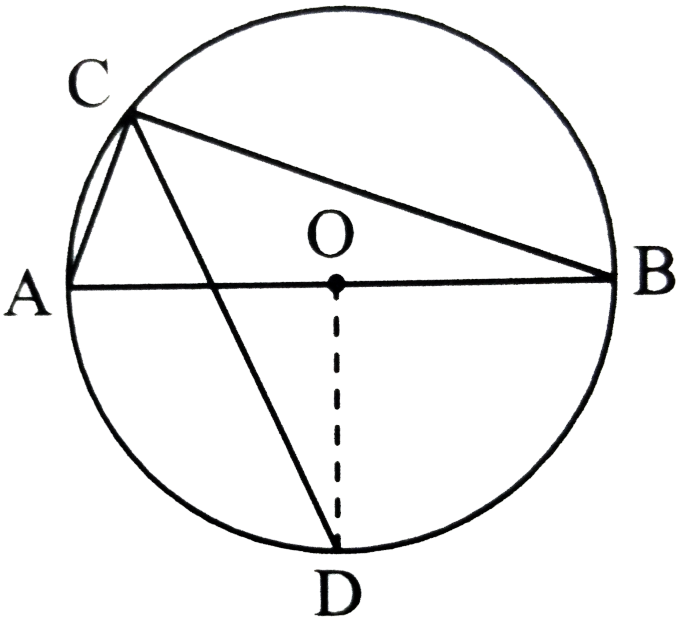
22. In the adjoining figure, seg AB is a diameter of a circle with centre O. the bisector of $\angle ACB$ intersects the circle at point D. Prove that ,seg $AD \cong segBD$. Complete the

following proof by filling the blanks.



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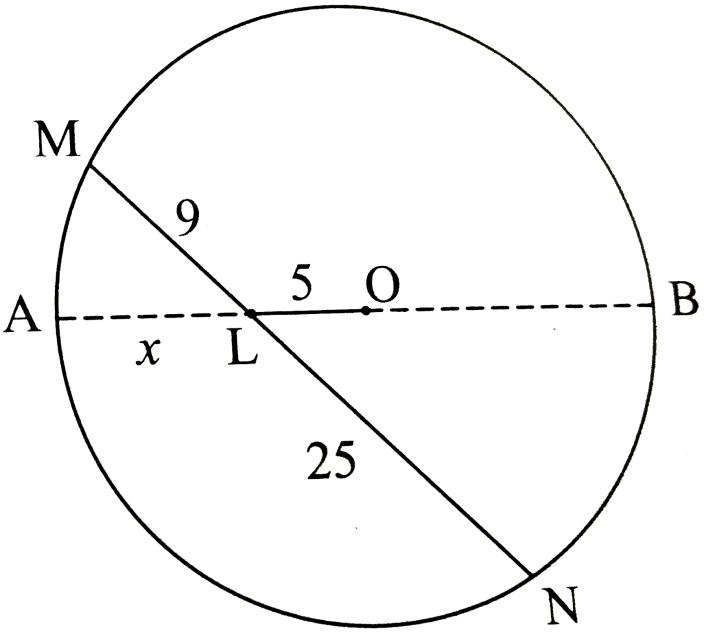
23. In the figure, seg MN is a chord of a circle with centre O. MN = 15, L is a point on chord

MN such that ML = 9 and d(O, L) = 5. Find the radius of the circle.



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24. In the given figure two circles touch each other at the point C. Prove that the common tangent at P and Q.

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25. Two circles intersect each other at the points P and Q. Two straight lines through P and Q intersect one circle at the points A and C and the other circle at B and D. Prove the AC|| BD

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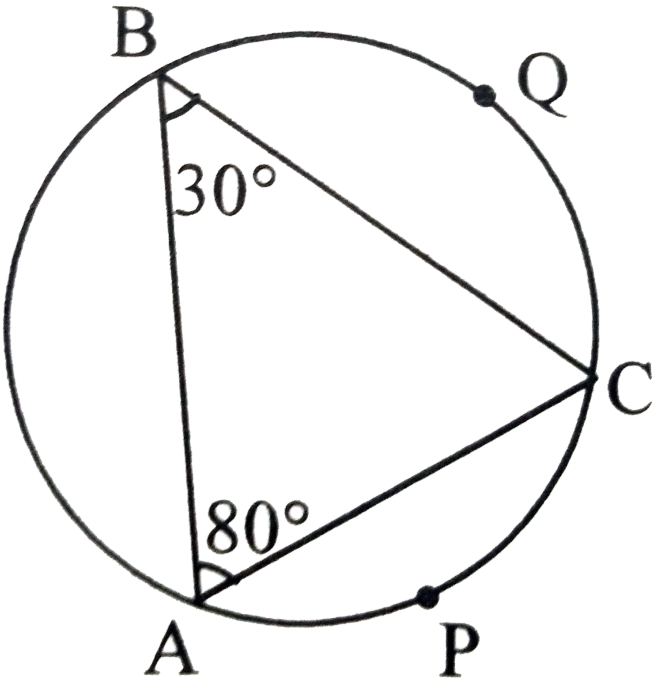
Activities For Practice

1. Complete the activity by filling the boxes.

In the given figure , $\angle BAC = 80^\circ$, $\angle ABC = 30^\circ$ and m (arc BQC)=160°.

Find (i) m(arc APC) (ii) m (arc AB).



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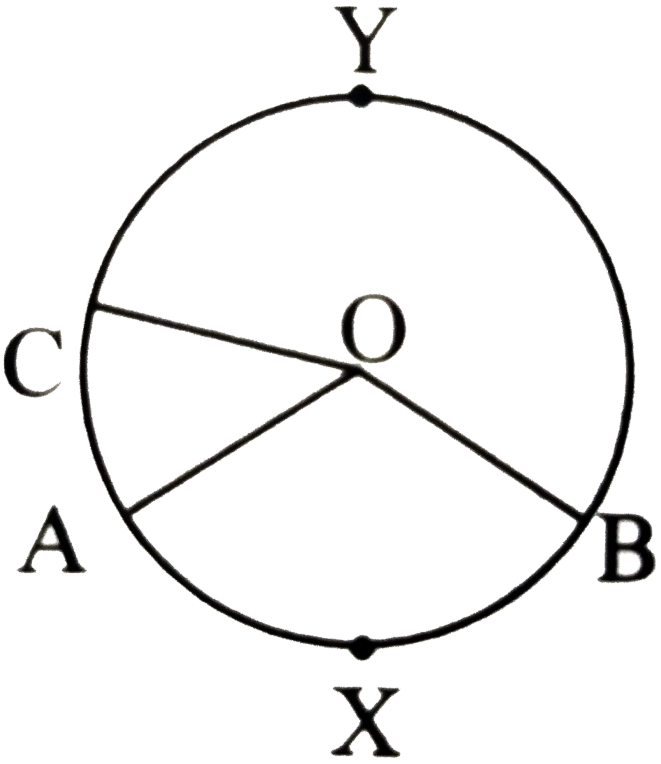
2. In the given figure, O is the centre of the circle .

$\angle AOB = 120^\circ$,m(arc AC)=55°.

Use the given information and fill the boxes.

(i)$m(arcAXB) = \square$ (ii) $m(arcCAB) = \square$

(iii) $\angle COB = \square$ (iv) $m(arcAYB) = \square$



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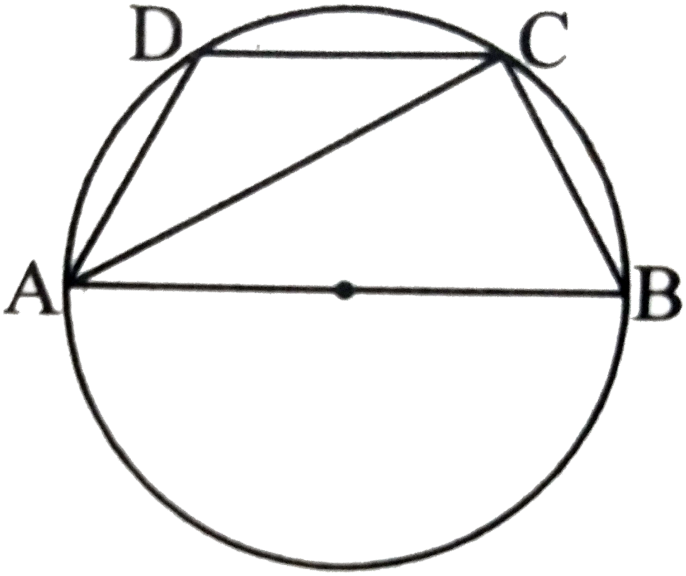
3. In the figure □ ABCD is a cyclic quadrilateral.Seg AB is a diameter . If $\angle ADC = 120^\circ$, complete the following activity to find the measure of $\angle BAC$.



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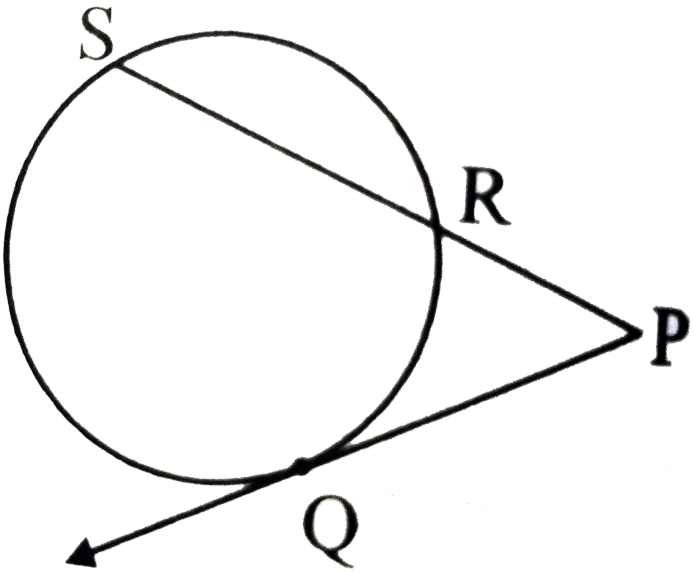
4. In the given figure,ray PQ touches the circle at point Q. PQ=12, PR=8, complete the following activity to find PS and RS.



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Multiple Choice Question

1. Concentric Circles have the same_____.

A. Diameter

B. radius

C. centre

D. chord

Answer: C

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2. A tangent at any point of a circle is perpendicular to the radius through the _____.

A. chord

B. diameter

C. point of contact

D. all of the above

Answer: C

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3. How many tangnet lines can be drawn to a circle from a point outside the circle ?

A. 0

B. 1

C. 2

D. 3

Answer: C

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4. The number of tangents that can be drawn to a circle at a point on the circle is

A. 0

B. 1

C. 2

D. 3

Answer: B

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5. If two circles touch externally , how many common tangents can be drawn to them ?

A. 0

B. 1

C. 2

D. 3

Answer: B

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6. Prove that the tangents drawn at the ends of a diameter of a circle are parallel.

A. coincident

B. parallel

C. intersecting

D. perpendicular

Answer: B

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7. The number of parallel tangents atmost a circle can have on a diameter is

A. 1

B. 2

C. 0

D. 3

Answer: B

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8. Angles inscribed in the same arc are

A. congruent

B. complementary

C. supplementary

D. none of these

Answer: A

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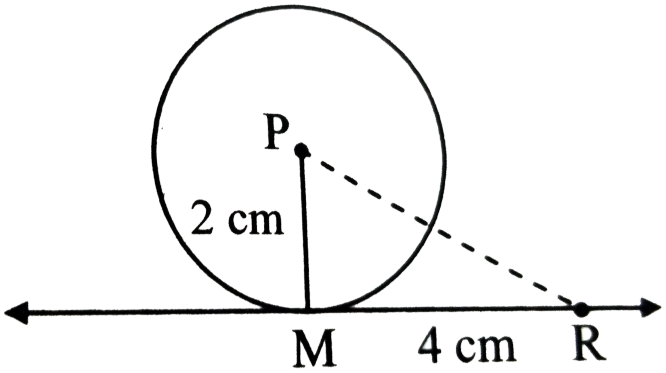
9.



For the above figure l(PR)=

A. 20cm

B. $\sqrt{20}$cm

C. 10cm

D. $\sqrt{10}$cm

Answer: B

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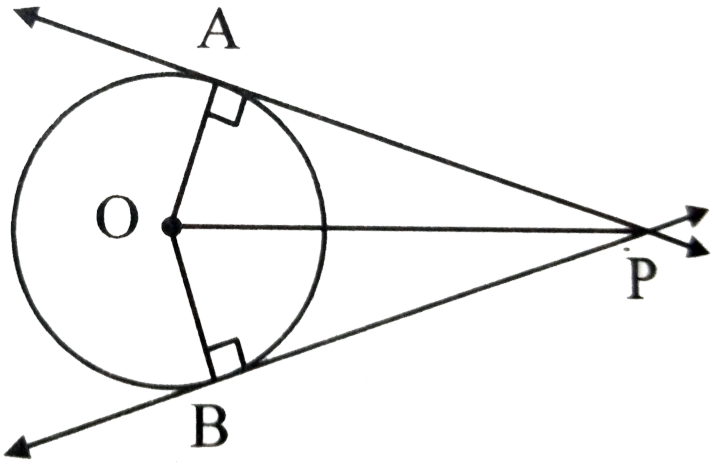
10. For the figure given below, which of the following options is correct?



A. AP=BP

B. $\angle APO = \angle BPO$

C. $\angle AOP = \angle BOP$

D. all of the above

Answer: D

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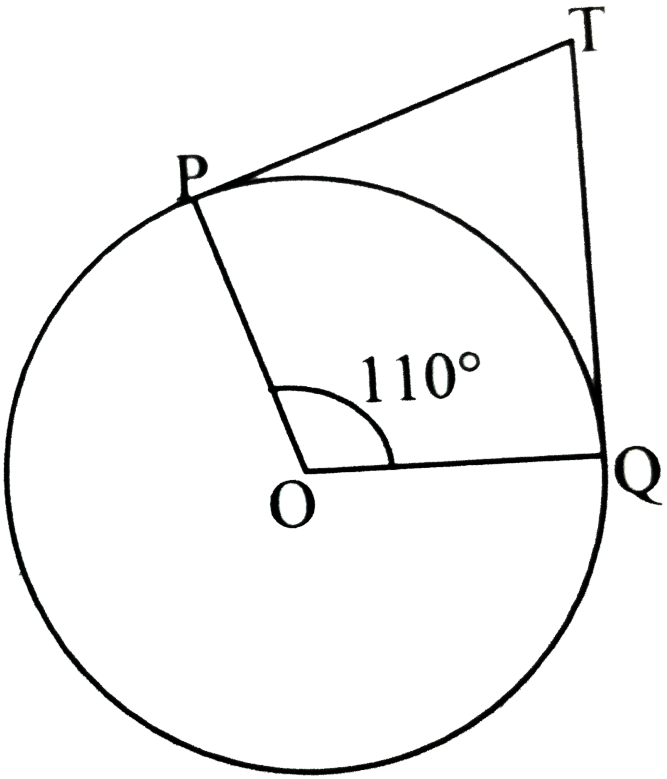
11. In the given figure , if TP and TQ are the two tangents to a circle with centre O so that

$\angle POQ = 110^\circ$, then $\angle PTQ$ is equal to



A. 60°

B. 70°

C. 80°

D. 90°

Answer: B

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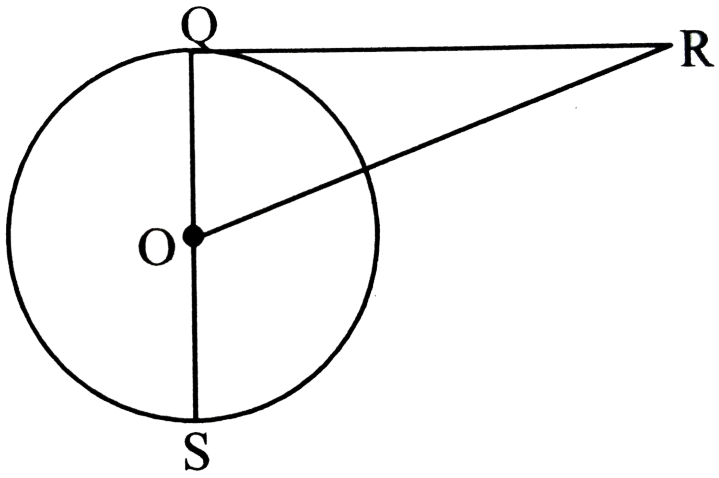
12. In the figure RQ is a tangent to the circle with centre O. If SQ=6cm, QR=4cm, find OR.



A. 4cm

B. 5cm

C. 6cm

D. 3cm

Answer: B

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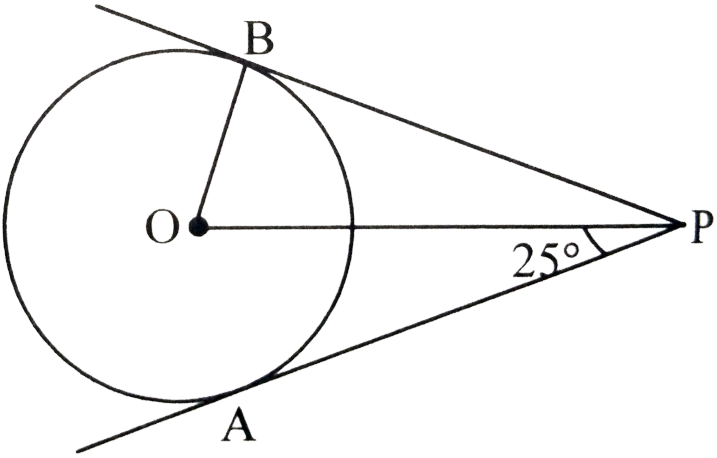
13. PA and PB are tangents to the circle with centre O touching it at A and B respectively. IF

$\angle APO = 25^\circ$, then $\angle POB$ is



A. 65°

B. 155°

C. 130°

D. 150°

Answer: A

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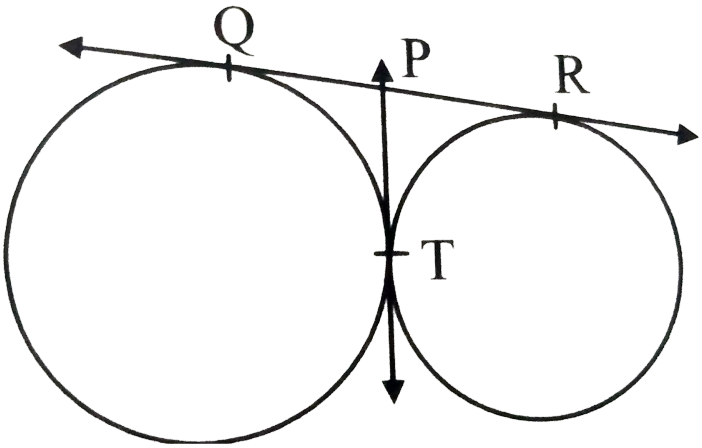
14. In figure, QR is a common tangent to the given circles, touching externally at the point T. The tangent at T meets QR at P.

If PT=3.8cm, then the length of QR(in cm) is



A. 3.8

B. 7.6

C. 5.7

D. 1.9

Answer: B

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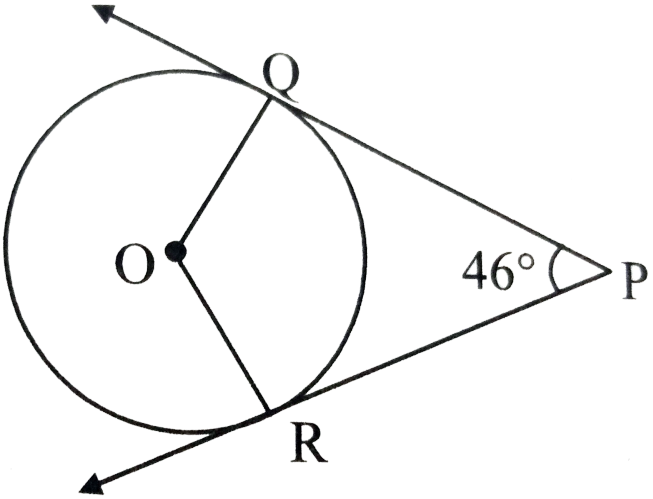
15. In figure, PQ and PR are two tangents to a circle with centre O. IF $\angle QPR = 46^\circ$, then

$\angle QOR$ equals



A. 67°

B. 134°

C. 44°

D. 46°

Answer: B

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16. Two circles touch each other externally at P . AB is a common tangent to the circle touching them at A and B . The value of $\angle APB$ is $30o$ (b) $45o$ (c) $60o$ (d) $90o$

A. 30°

B. 45°

C. 60°

D. 90°

Answer: D

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17. If two circles with radii 5 cm and 3 cm respectively touch externally, then the distance between their centre is _____

A. 2cm

B. 4cm

C. 8cm

D. 16cm

Answer: C

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18. IF two circles of radii r_1 and r_2 $(r_2 > r_1)$ touch internally , then the distance between their centres will be

A. $r_1 - r_2$

B. $r_2 - r_1$

C. $r_1^2 - r_2^2$

D. $r_2^2 - r_1^2$

Answer: B

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19. The angle subtended by the diameter at any point on the circles is a/an_____angle.

A. acute

B. obtuse

C. Right

D. reflex

Answer: C

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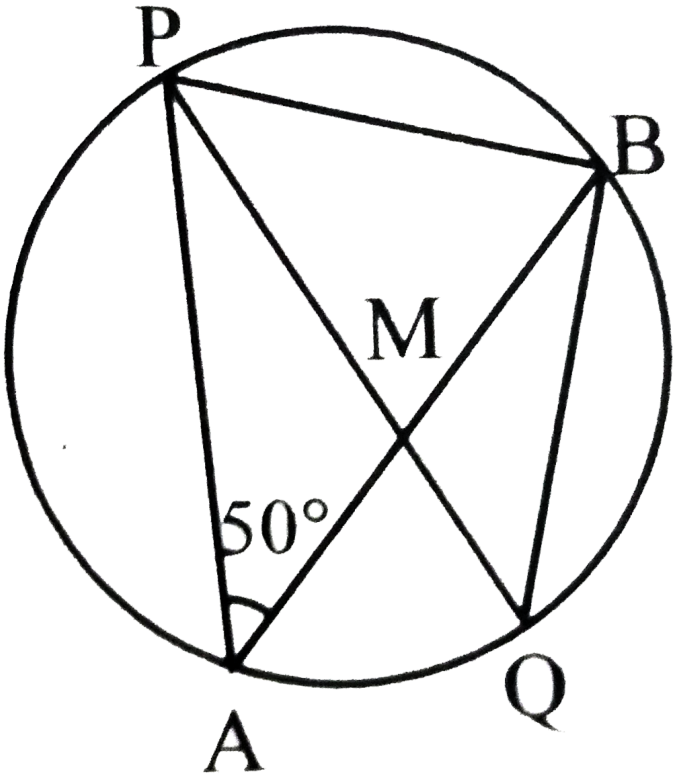
20. In the given figure, if $m\angle PAB = 50^\circ$, then $m\angle PQB$=



A. 50°

B. 100°

C. 25°

D. 75°

Answer: A

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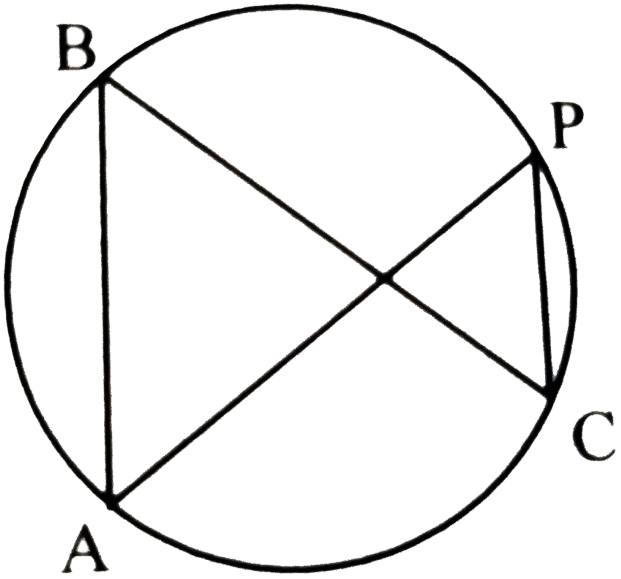
21. For the given figure, which of the following is true?



A. $\angle ABC \cong \angle APC$

B. $\angle ABC \cong \angle BCP$

C. $\angle BAP \cong \angle APC$

D. $\angle ABP \cong \angle ACP$

Answer: A

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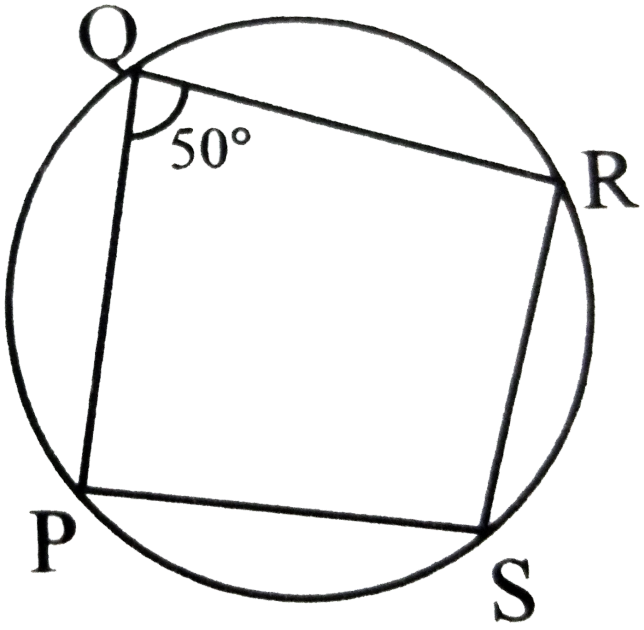
22. In the given figure, $\square$ PQRS is a cyclic quadrilateral such that $\angle PQR = 50^\circ$ then

$\angle PSR$=



A. 50°

B. 100°

C. 120°

D. 130°

Answer: D

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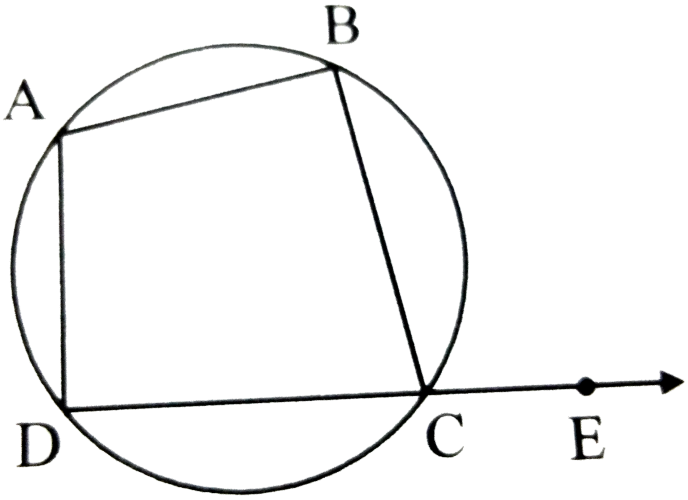
23. For the cyclic quadrilateral shown below, which of the following is always true?



A. $\angle BCE = \angle BAD$

B. $\angle BCE = \angle BCD$

C. $\angle BAD = \angle BCD$

D. $\angle ABC = \angle ADC$

Answer: A

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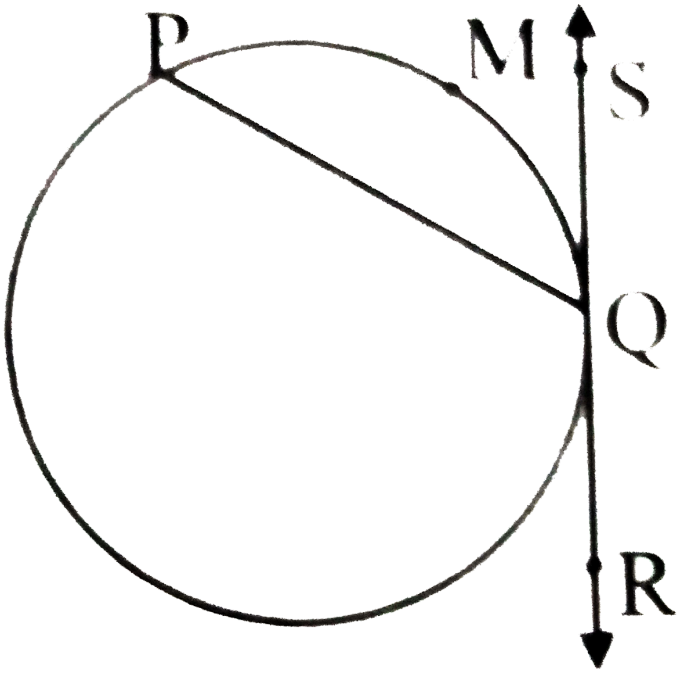
24. In the following figure , m(arc PMQ)=110°, then $\angle PQS$=



A. 50°

B. 55°

C. 110°

D. 220°

Answer: B

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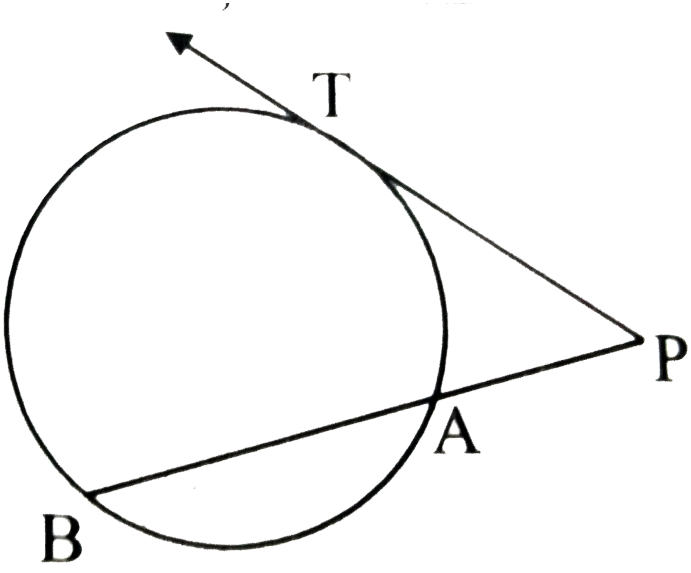
25. A tangent segment PT touching a circle in T and a secant PAB are as shown in the figure below. IF TP=12 and PA=4, then AB=



A. 36 units

B. 32 units

C. 3 units

D. 40 units

Answer: B

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Additional Problems For Practice

1. Find the length of the tangent segment from a point which is at a distance of 5 cm from the centre of the circle of radius 3cm.

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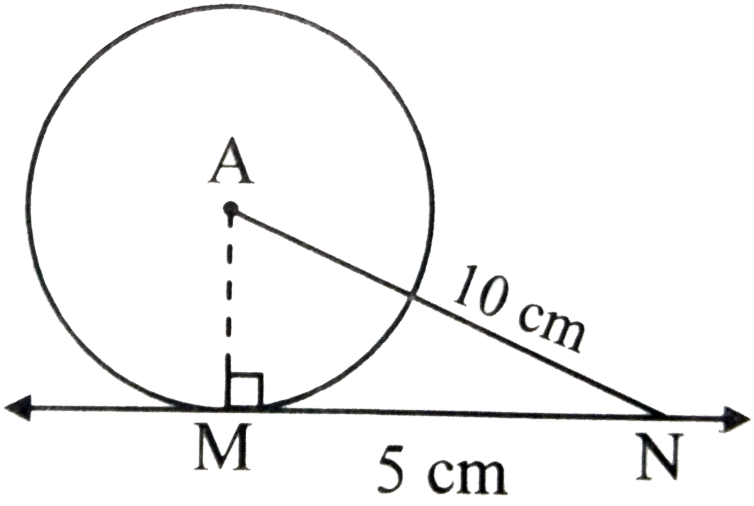
2. In the adjoining figure , point A is the centre of the circle , AN=10cm . Line NM is tangent at M. Determine the radius of the circle , if MN =5

cm.



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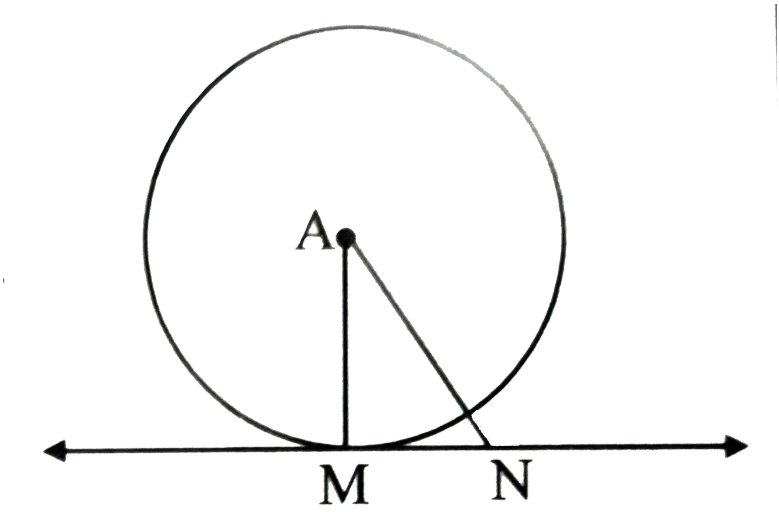
3. In the following figure ,Point A is the centre of the circle . Line MN is tangent at point M. IF AN=12cm and MN=6cm , determine the radius

of the circle.



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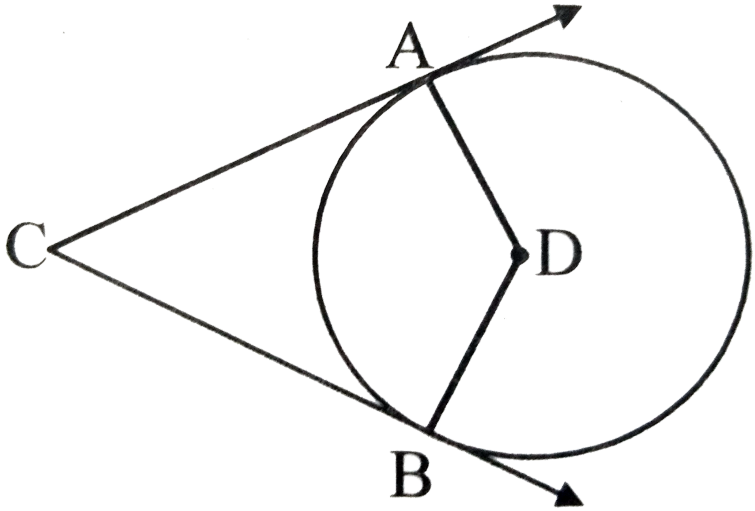
4. In the given figure circle with centre D touches the sides of $\angle ACB$ at A and B. If

$\angle ACB = 52^\circ$, find measure of $\angle ADB$.



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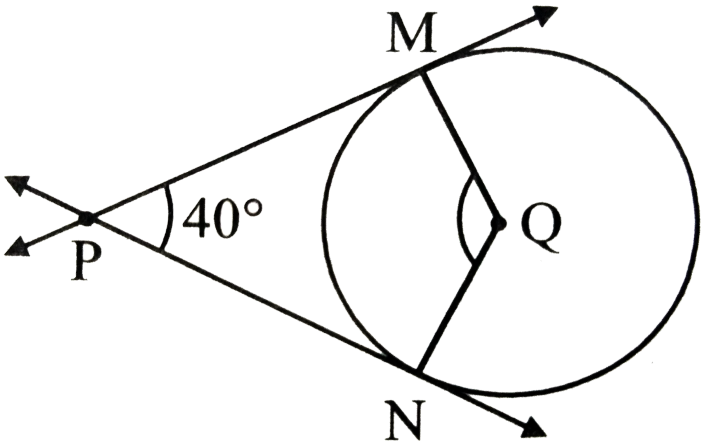
5. In the adjoining figure , Q is the centre of the circle and PM,PN are tangent segments to

the circle. IF $\angle MPN = 40^\circ$, find $\angle MQN$.



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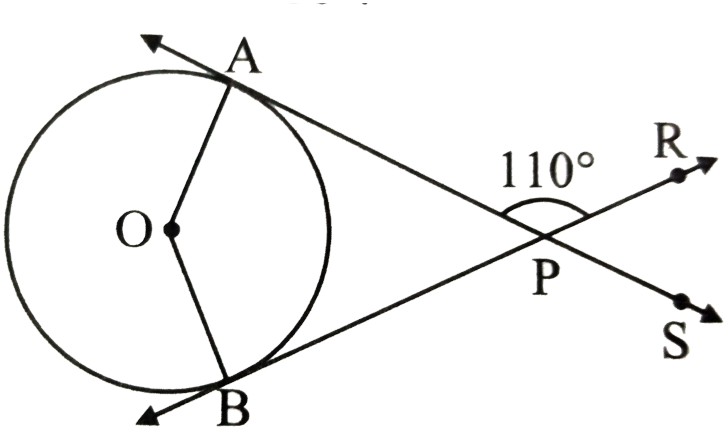
6. Find the angle between two radii at the centre of the circle as shown in the figure. Lines PA and PB are tangents to the circle at

other ends of the radii and $\angle APR = 110^\circ$



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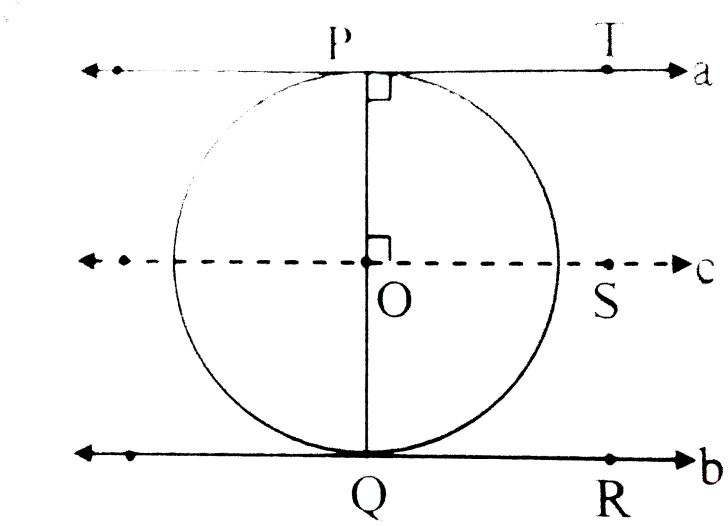
7. Point O is the centre of a circle . Line a and line b are parallel tangents to the circle at P and Q. Prove that segment PQ is a diameter of

the circle.



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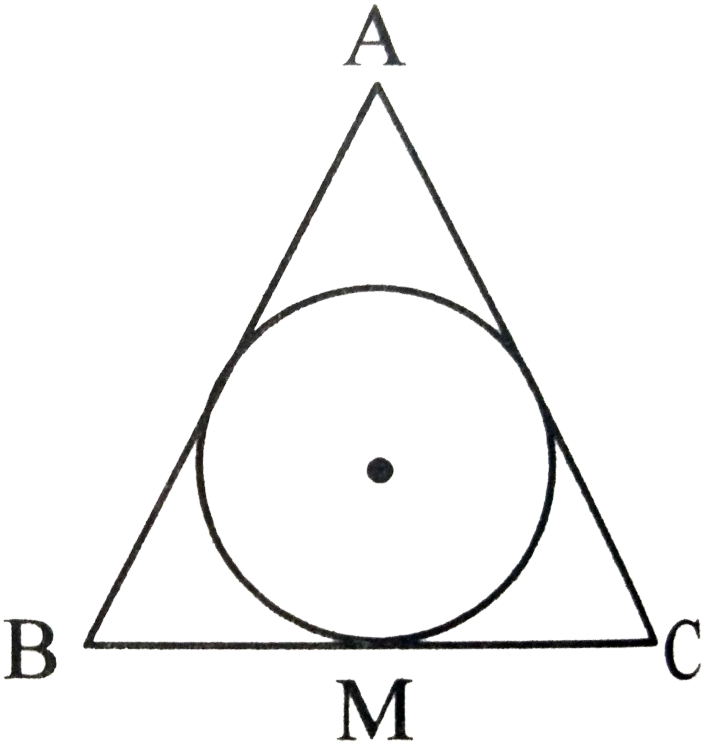
8. In the adjoining figure, the circle is the incircle of isosceles ΔABC, where seg AB $=$

seg AC. Prove that M bisects BC.



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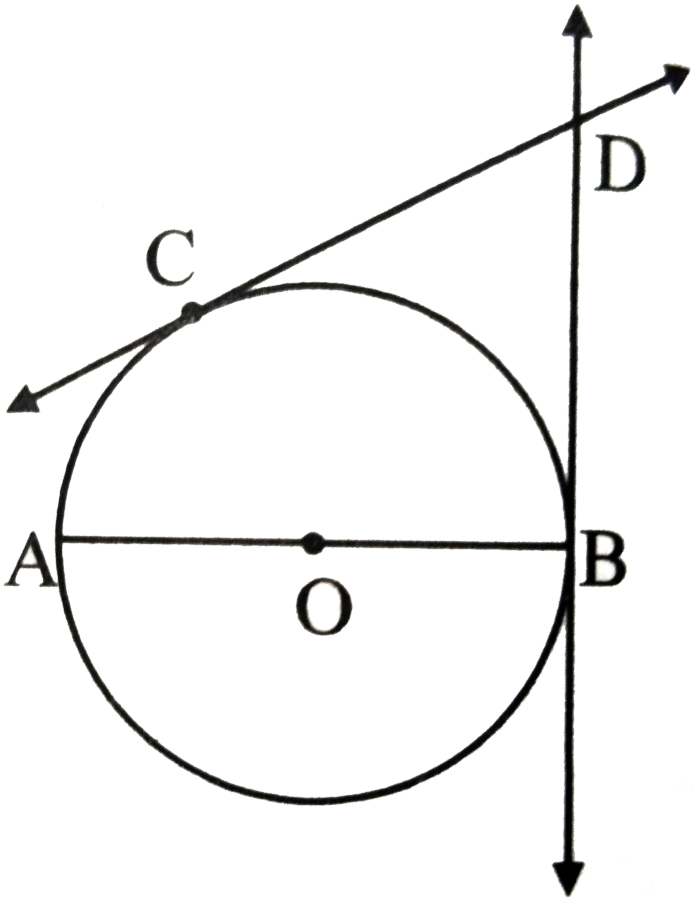
9. In the adjoining figure, O is the centre and seg AB is a diameter. At the point C on the

circle, the tangent CD is drawn. Line BD is a tangent to the circle at the point B. Show that segOD || chord AC.



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10. If two circles with radii 8 and 3 respectively touch externally, then find the distance between their centres.

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11. A circle of radius 2 cm touches a circle of radius 10cm internally. Determine the length of a tangent segment drawn through the cente of the larger circle to the smaller circle.

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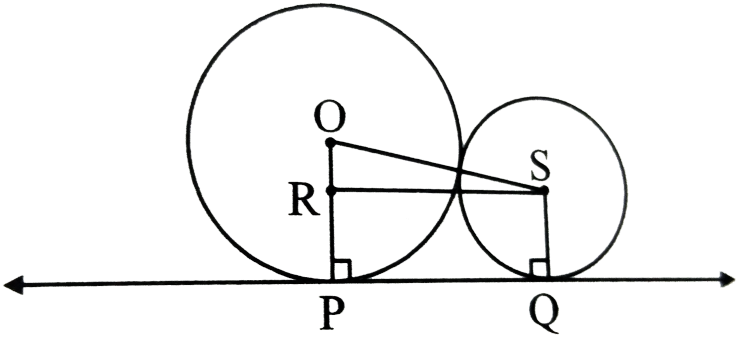
12. In the adjoining figure , line PQ is a common tangent to the externally touching circles and the radii of two circles are 25cm and 9cm. Find the length of the common tangent segment of these circles.



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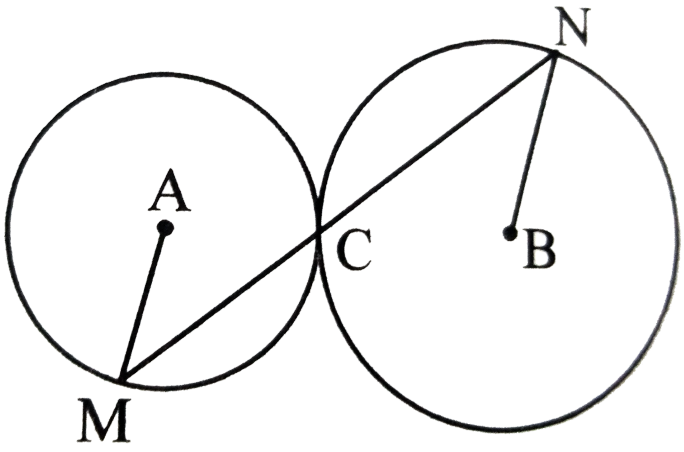
13. As shown in the adjoining figure , two circles centred at A and B are touching at C. Line passing through C intersects the two circles at M and N respectively.

Show that seg AM ||seg BN.



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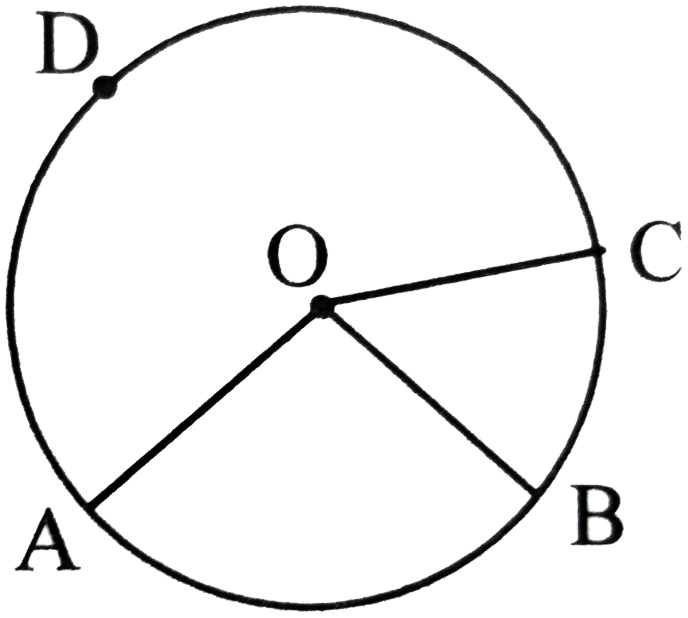
14. In the adjoining figure, points A, B,C and D are on the circle . The measures of $\angle AOB$ and $\angle BOC$ are 80° and 75° respectively. Find measure of arc ABC, arc ADB and arc BAC.



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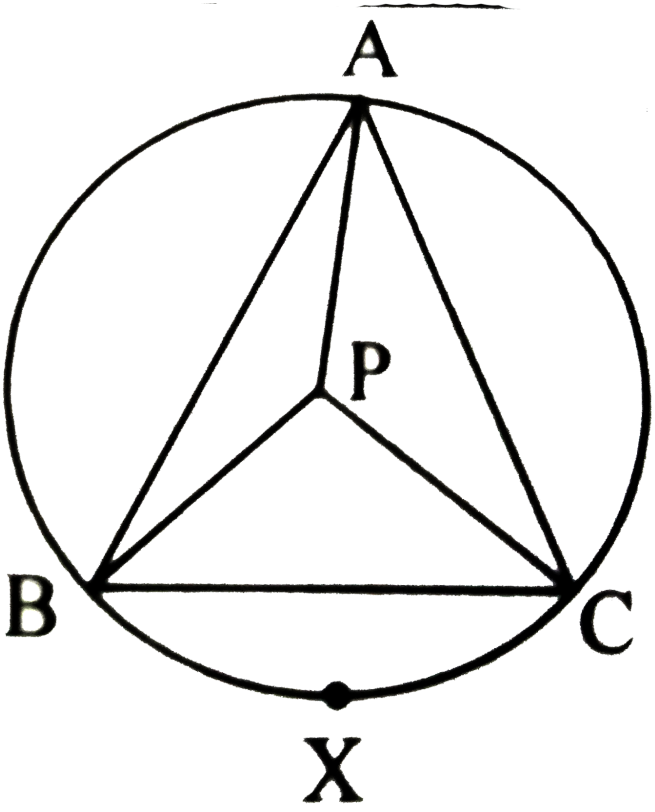
15. In the adjoining figure, P is the circumcentre of the $\Delta ABC. m\angle APC = 118^\circ$ and $m\angle PBC = 45^\circ$, then find:

(i) m(arc BXC)

(ii) m(arc BCA)



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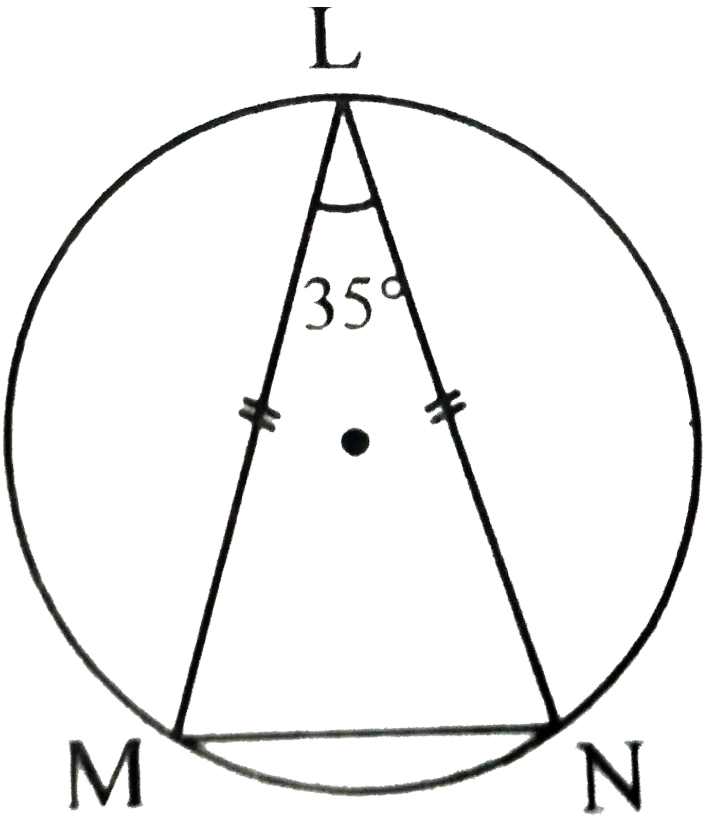
16. In the adjoining figure, chord LM $\cong$ chord LN, $\angle L = 35^\circ$ find

(i) m(arc MN)

(ii) m (arc LN)



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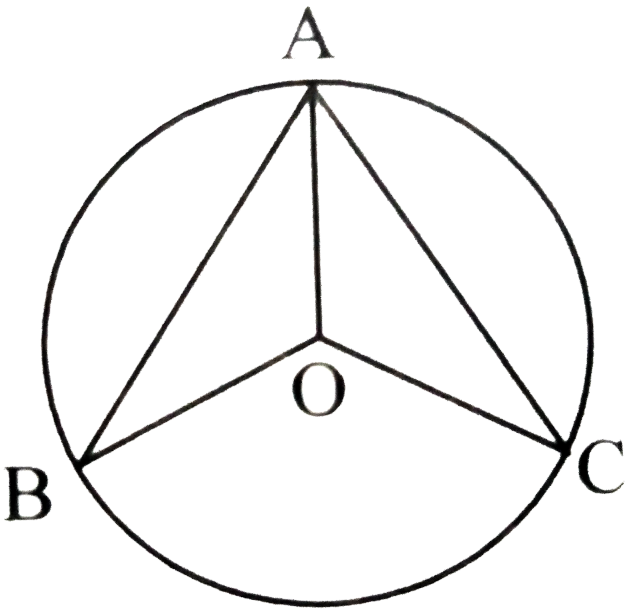
17. In the adjoining figure, A,B and C are three points on a circle with centre O such that $m\angle AOB = 110^\circ, \quad m\angle AOC = 120^\circ.$ Find $m\angle BAC.$



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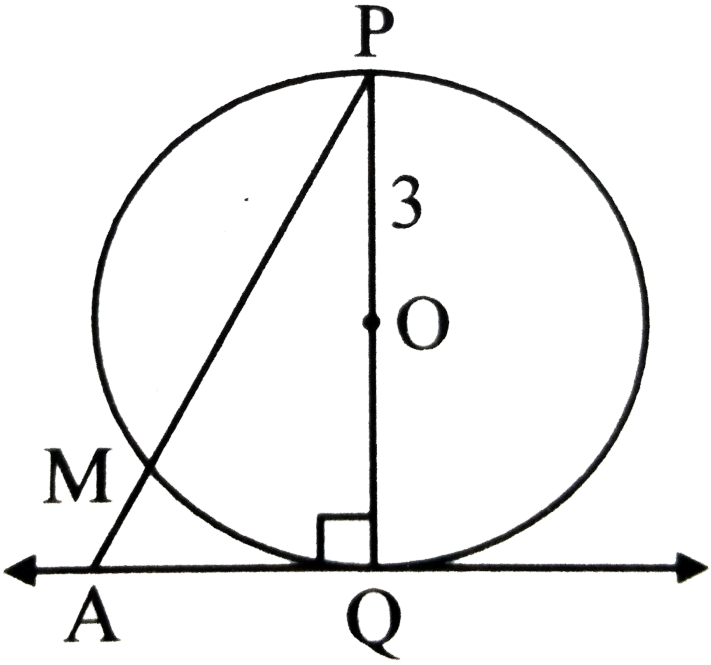
18. In the adjoining figure, O is the centre, seg PQ is diameter , line AQ is a tangent. If OP=3 and m(arc PM)=120° , determine AP.



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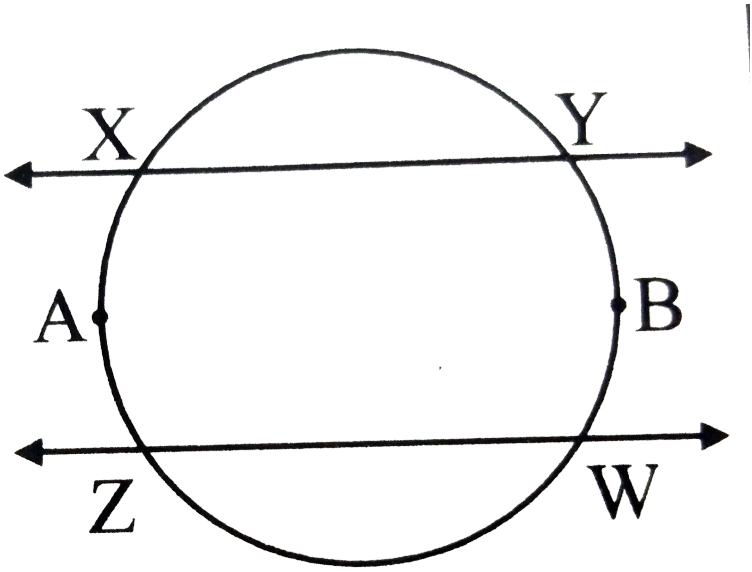
19. In the adjoining figure, m (arc XAZ)=m(arc YBW). Prove that : XY||ZW



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20. In a cyclic quadrilateral ABCD, $\angle B = (5x + 40)^\circ$ and $\angle D = (8x + 23)^\circ$,

then find the measures of $\angle B$ and $\angle D$.

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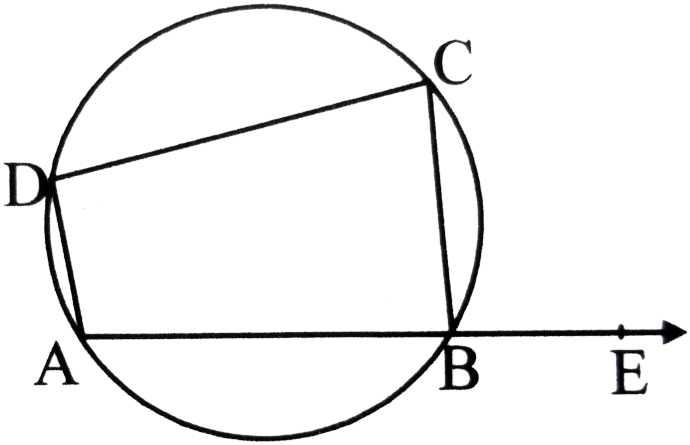
21. □ ABCD is a cyclic quadrilateral . m (arc ABC) =230° . Find $\angle ABC$, $\angle CDA$ and $\angle CBE$.



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22. The quadrilateral formed by angle bisectors of a cyclic quadrilateral is also cyclic.

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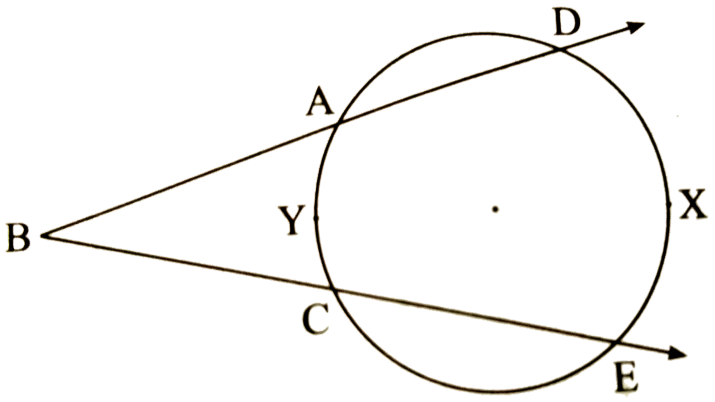
23. In the figure , if m (arc DXE 0 $=100^{\circ}$ and m (arc AYC) $=40^{\circ}$, find $\angle DBE$.



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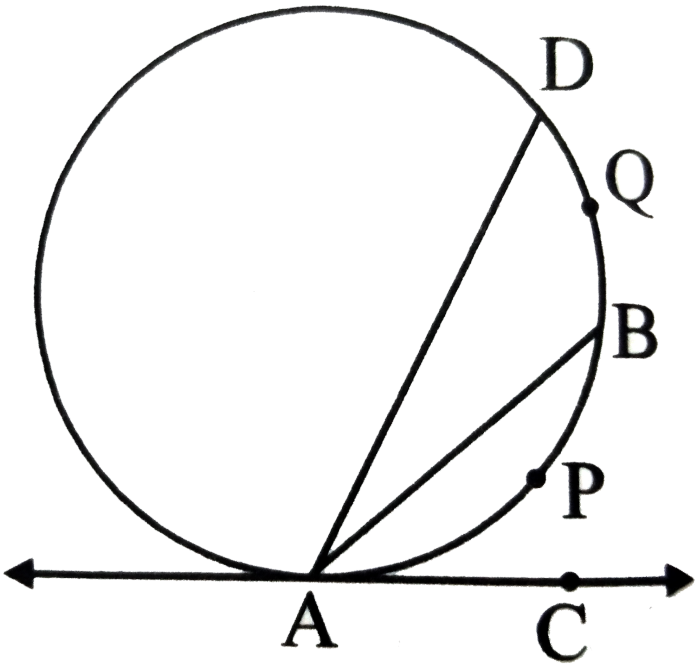
24. In the adjoining figure, seg AB and seg AD are chords of the circle . C is a point on tangent to the circle at point A. IF m(arc APB)= 80° and $\angle BAD = 30^\circ$, then find

(i) $\angle BAC$ (ii) m(arc BQD)



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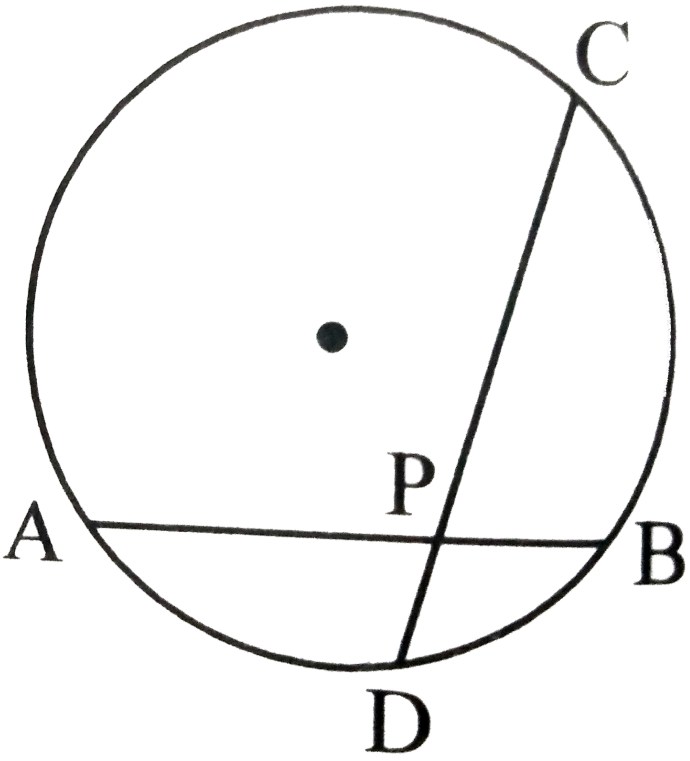
25. In the given figure PA=6, PB=4 and PC=8. Find PD.



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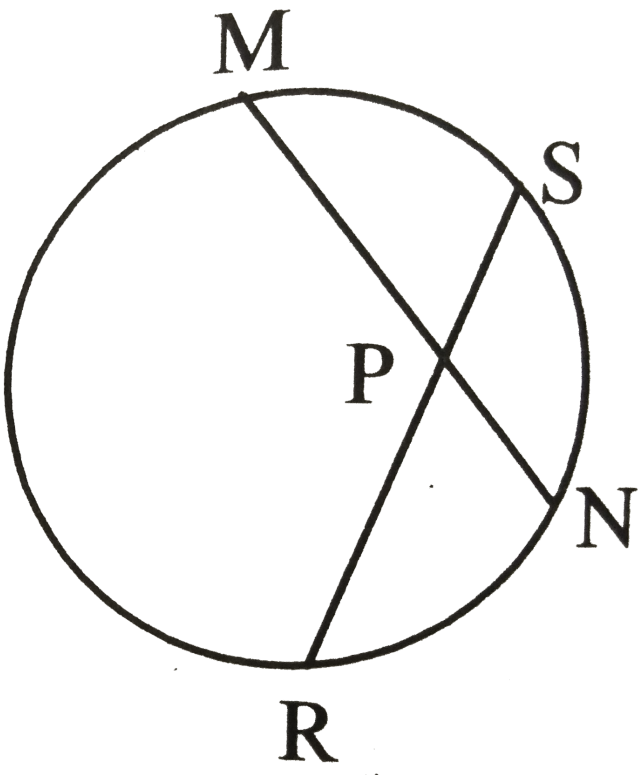
26. In the adjoining figure. Chord MN and chord RS intersect each other at point P. If

PR=6,Ps=4, MN=11, find PN.



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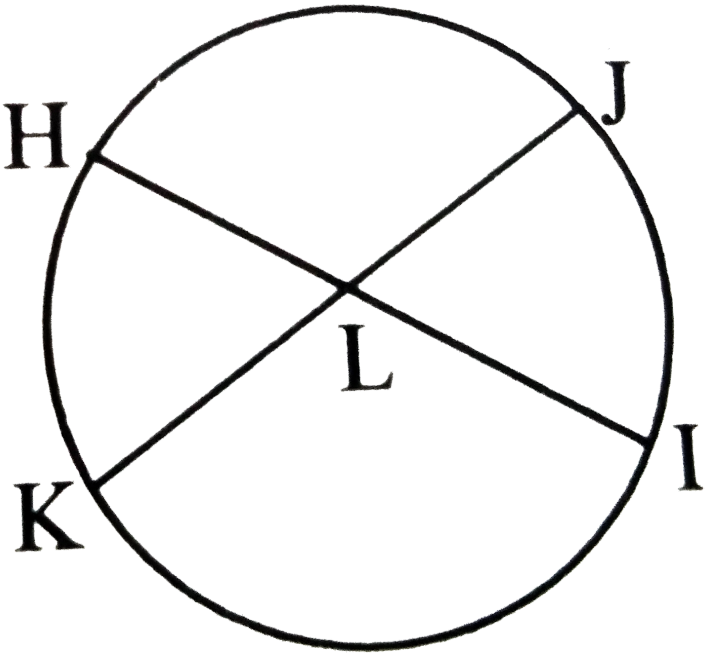
27. In the adjoining figure , chords HI and KJ intersect at point L. If KL=8,LJ=5 and HI=14, then find the length of HL.



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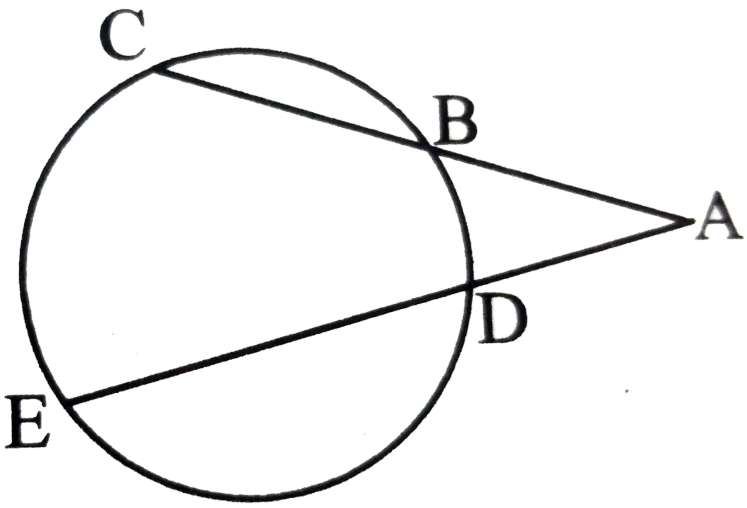
28. In the adjoining figure, chords CB and ED intersect each other in point A in the exterior of the circle. IF CB=5,AB=7,EA=20 and IF ED exceeds AD, determine ED-AD.



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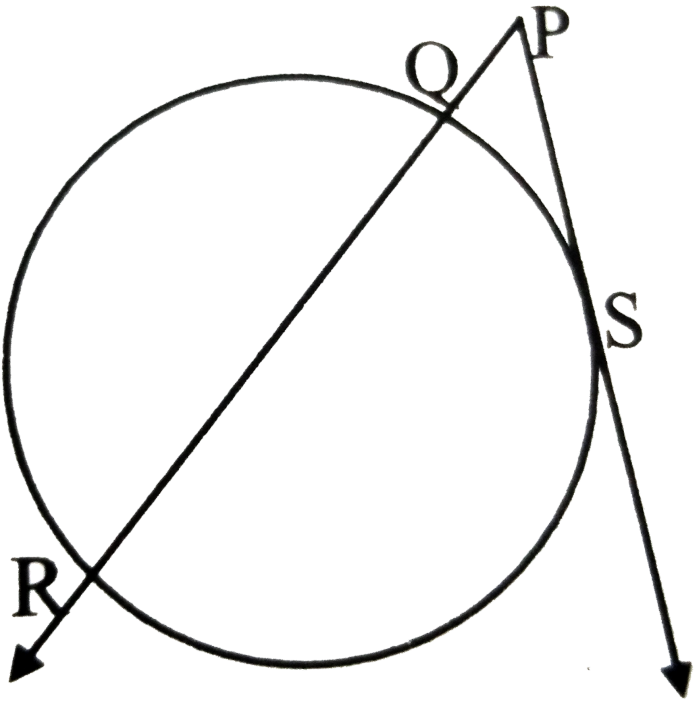
29. In the adjoining figure ,seg PS is a tangent segment. Line PR is a secant. If PQ=3.6, and QR=6.4, find PS.



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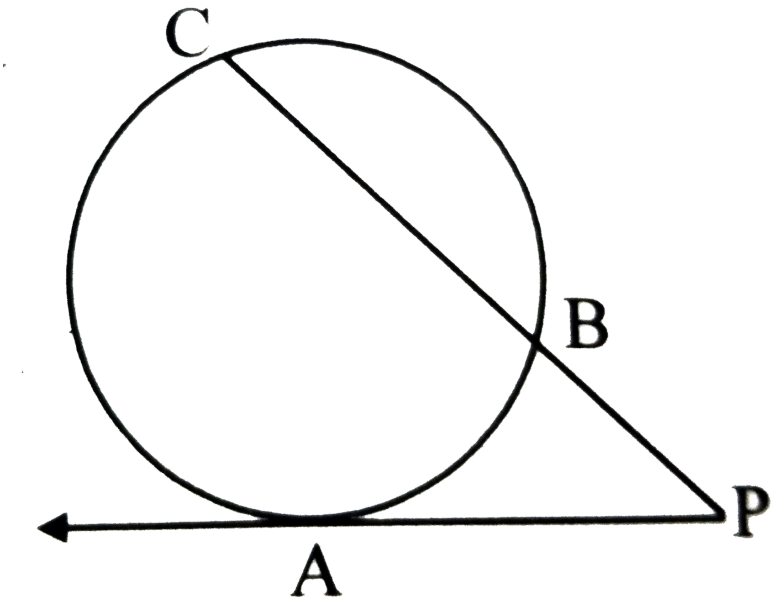
30. In the given figure, a tangent segment PA touching a circle in A and a secant PBC are shown If AP=15 cm and BP=10cm , find the Length of PC.



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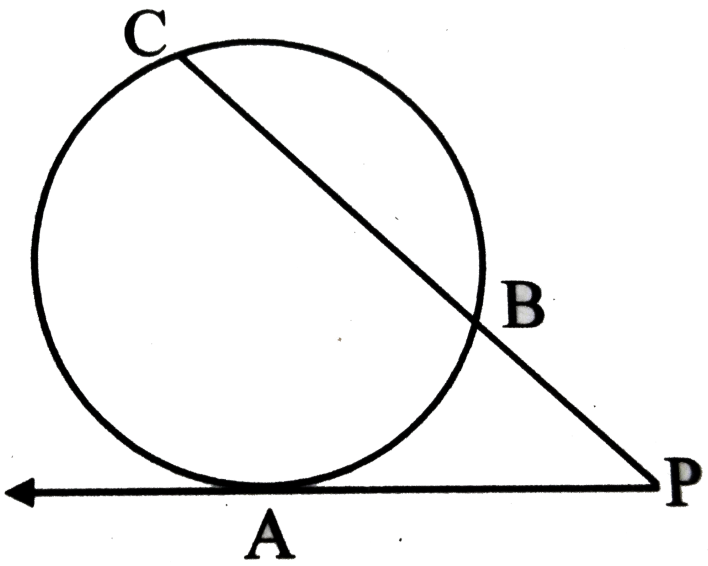
31. In the following figure , ray PA is the tangent to the circle at point A and PBS is secant . If AP=14,BP=10, find BC.



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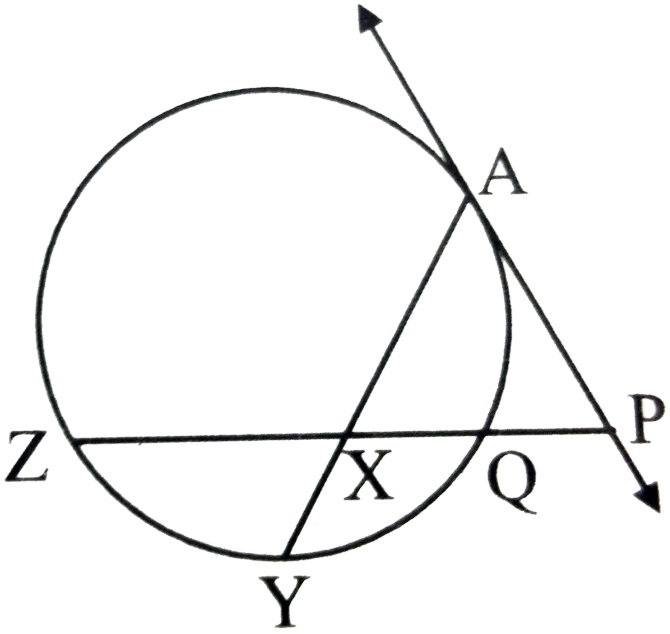
32. In the adjoining figure, line AP is tangent to the circle at A, secant through P intersects chord AY in point X such that AP=PX=XY.

IF PQ=1 and QZ=8, then find AX.



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Chapter Assessment

1. If two circles with diameter 8cm and 6 cm touch externally, then the distance between their centres is _____.

A. 2 cm

B. 7 cm

C. 10 cm

D. 14 cm

Answer: B

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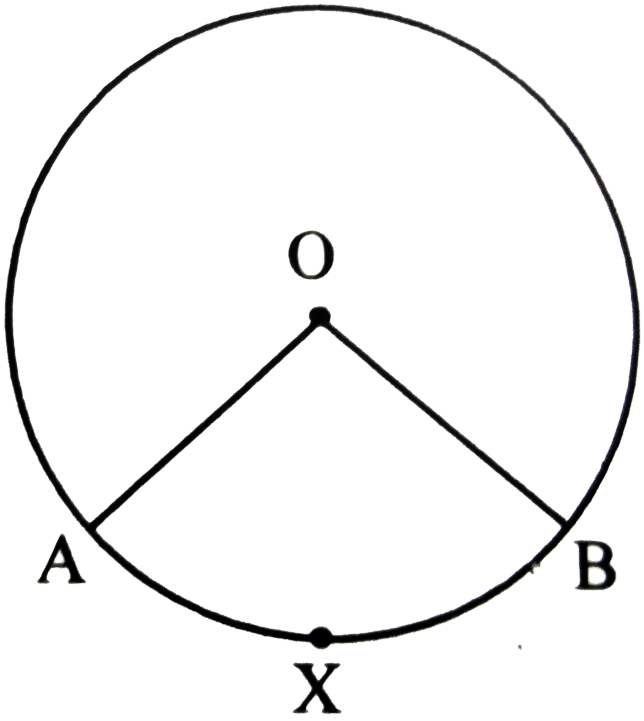
2. In the given figure , O is the centre of the circle. If m(arc AXB)=80°, then $m\angle AOB$=



A. 40°

B. 80°

C. 160°

D. 120°

Answer: B

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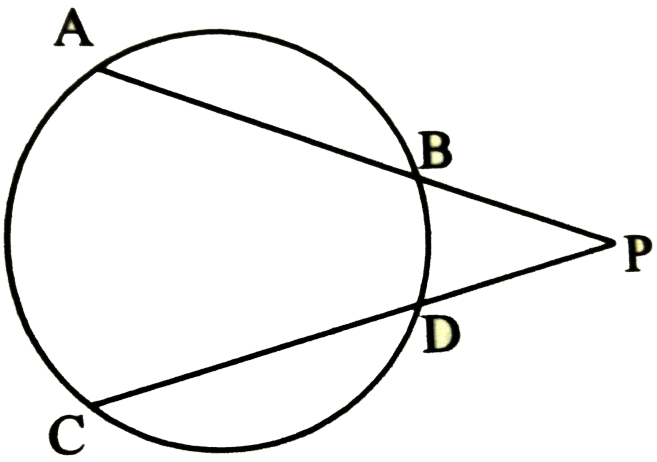
3. In the given figure ,secants AP and CP intersect in point P. If AP=12,PB=5,CP=20, then

DP=



A. 8

B. 6

C. 4

D. 3

Answer: D

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4. Find the radius of the circle passing through the vertices of a right angled traingle the lengths of whose perpendicular sides are 8 and 15.

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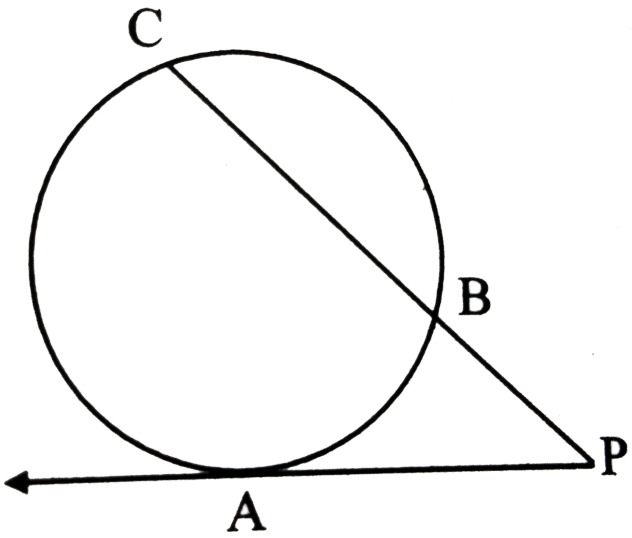
5. In the following figure, a tangent segment PA touching a circle in A and a secant PBC are

shown. If AP=12,BP=9, find BC.



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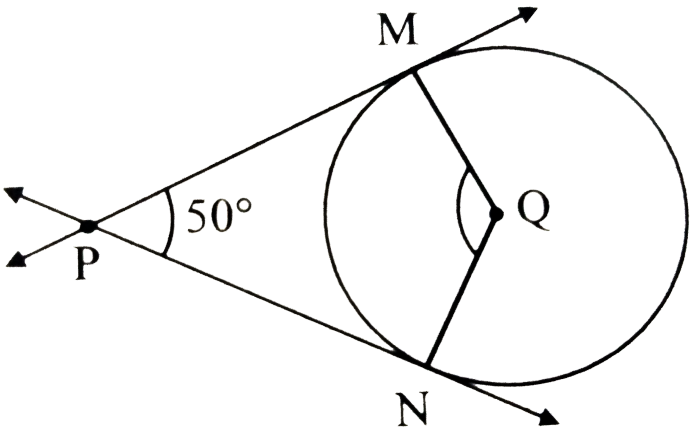
6. In the given figure, Q is the centre of the circle and PM ,PN are tangent segments to the

circle. If $\angle MPN = 50^\circ$ find $\angle MQN$.



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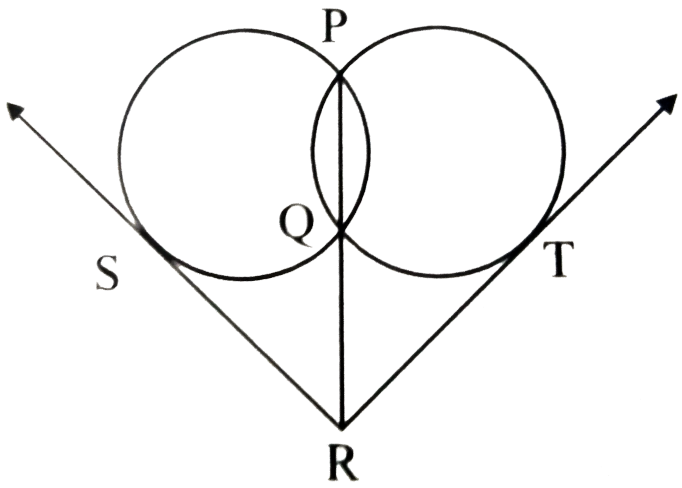
7. In the figure, two circles intersect each other in points P and Q. If tangent from point R touch the circles at S and T, then prove that

RS=RT.



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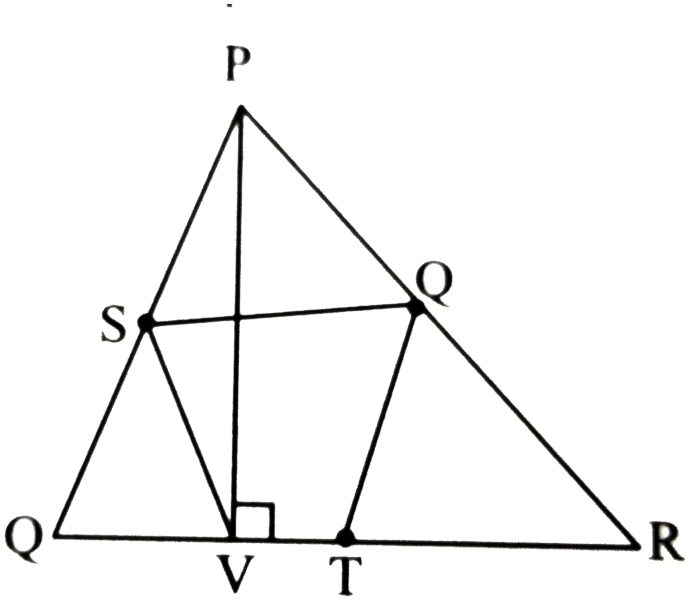
8. In the given figure, points S,T and U are the midpoints of sides PQ,QR and PR respectively. IF PV $\perp$ QR, then prove that $\square$ SVTU is a cyclic

quadrilateral.



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9. Prove that the opposite sides of a quadrilateral circumscribing a circle subtend

supplementary angles at the centres of the circle.

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