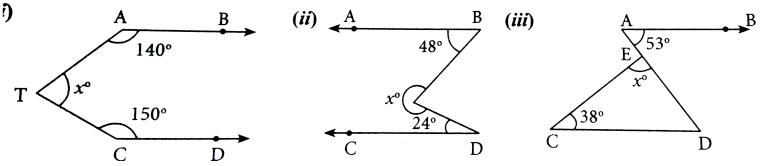
MATHS

BOOKS - FULL MARKS MATHS (TAMIL ENGLISH)

GEOMETRY

Exercise 4 1

1. In the figure, AB parallel to CD, find x.

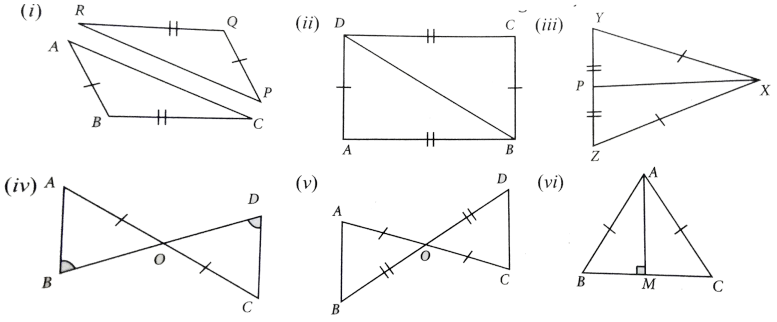


Watch Video Solution

2. The angles of a triangle are in the ratio 1:2:3, find the measure of each angles of the triangle.

Watch Video Solution

3. Consider the given pairs of triangles and say whether each pair is that of congruent triangles. If the triangles are congruent, say 'how', if they are not congruent say 'why' and also say if a small modification would them congruent :



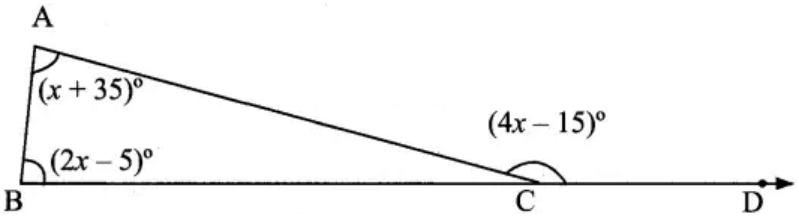
Watch Video Solution

Watch Video Solution

4. $\triangle ABC$ and $\triangle DEF$ are two triangles in which AB=DF, $\angle ACB = 70^\circ, \angle ABC = 60^\circ, \angle DEF = 70^\circ$ and $\angle EDF = 60^\circ$. Prove that the triangles are congruent.

Watch Video Solution

5. Find all the three angles of the ΔABC.



Watch Video Solution

Exercise 4 2

1. The angles of a quadrilateral are in the ratio 2:4:5:7. Find all the angles.

Watch Video Solution

2. In a quadrilateral ABCD, $\angle A = 72^\circ$ and $\angle C$ is the supplementary of $\angle A$. The other two angles are $2x - 10$ and $x + 4$. Find the value of x and the measure of all the angles.

Watch Video Solution

3. ABCD is a rectangle whose diagonals AC and BD intersect at O. If $\angle OAB = 46^\circ$, find $\angle OBC$.

Watch Video Solution

4. The lenghts of the diagonals of a Rhombus are 12 cm and 16 cm. Find the side of the rhombus.

Watch Video Solution

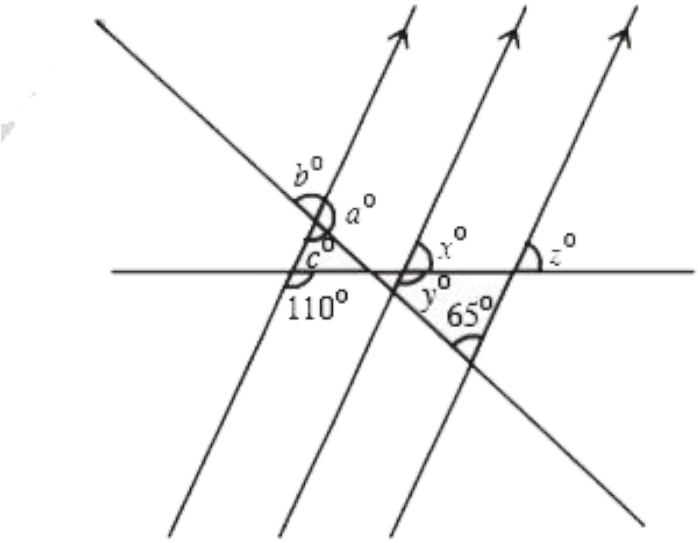
5. Show that the bisectors of angles of a parallelogram form a rectangle.

Watch Video Solution

6. If a triangle and a parallelogram lie on the same base and between the same parallels, then prove that the area of the triangle is equal to half of the area of parallelogram.

Watch Video Solution

7. In the adjacent figure, find the value of x, y, z and a, b, c.



Watch Video Solution

8. In the figure $\angle A = 64^\circ, \angle ABC = 58^\circ$. If BO and CO are the bisectors of $\angle ABC$ and $\angle ACB$ respectively of $\triangle ABC$, find x° and y°.

Watch Video Solution

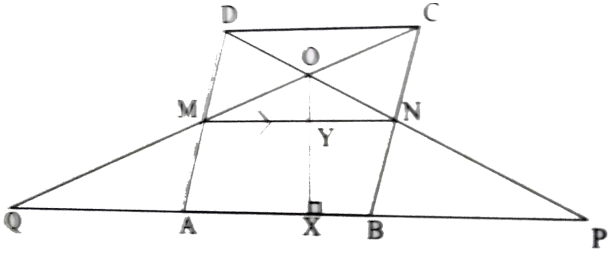
9. In the given figure, if $AB = 2, BC = 6, AE = 6, BF = 8, CF = 7$ and $CF = 7$, compute the ratio of the area of quadrilateral ABCE to the area of ΔCDF.

Watch Video Solution

10. In the given figure, ABCD is a rectangle and EFGH is a parallelogram. Using the measurements given in the figure, what is the length "d" of the segment that is perpendicular to $\overline{HE}$ and $\overline{FG}$?

Watch Video Solution

11. In parallelogram ABCD of the accompanying diagram, line DP is drawn bisecting BC at N and meeting AB (extended) at P. From vertex C, line CQ is drawn bisecting side AD at Ma and meeting AB (extended) at Q. Lines DP and CQ meet at O. Show that the area of triangle QPO is $\frac{9}{8}$ of the area of the parallelogram ABCD.



View Text Solution

Exercise 4 3

1. The diameter of the circle is 52 cm and the length of one its chord is 20 cm. Find the distance of the chord from the centre.

Watch Video Solution

2. The chord of length 30 cm is drawn at the distance of 8 cm from the centre of the circle Find the radius of the circle.

Watch Video Solution

3. Find the length of the chord AC where AB CD are the diameters perpendicular to each other of a circle with

radius $4\sqrt{2}$ cm and also find $\angle OAC$ and $\angle OCA$

Watch Video Solution

4. A chord is 12 cm away from the centre of the circle of radius 15cm. Find the lengh of the chord.

Watch Video Solution

5. In a circle, AB and CD are two parallel chords with centre O and radius 10 cm such that AB=16 cm and CD= 12 cm determine the distance between the two chords?

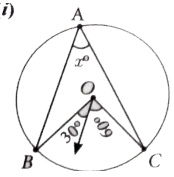
Watch Video Solution

6. Two circles of radii 5 cm and 3 cm intersect at two points and the distance between their centres is 4 cm. Find the length of the common chord.

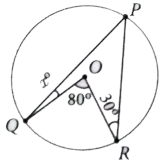
Watch Video Solution

7. Find the value of x° in the folowing figures :

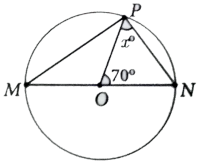
(i)



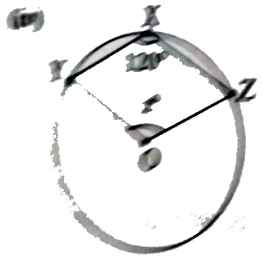
(ii)



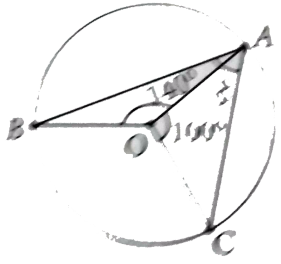
(iii)



(iv)

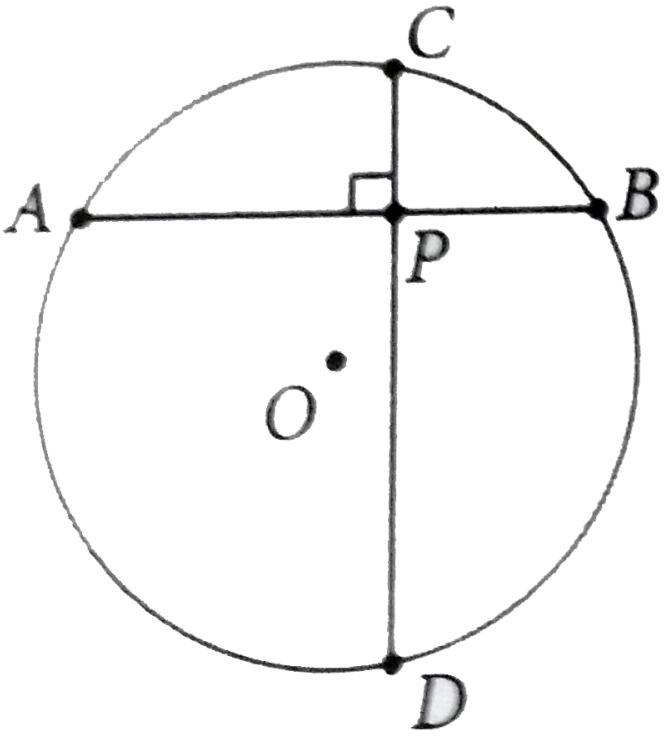


(v)



View Text Solution

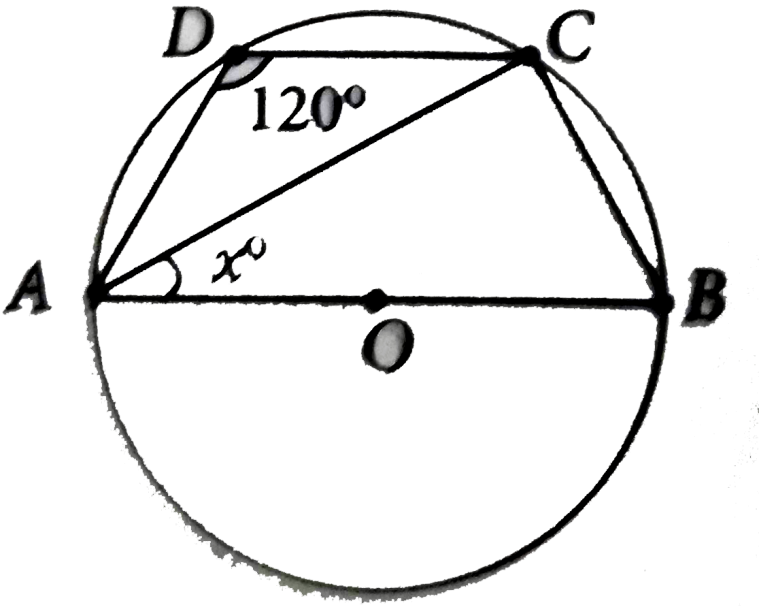
8. In the given figure, $\angle CAB = 25^\circ$, find $\angle BDC$, $\angle DBA$ and $\angle COB$.



Watch Video Solution

Exercise 4 4

1. Find the value of x in the given figure.



Watch Video Solution

2. In the given figure, AC is the diameter of the circle with center O. If $\angle ADE = 30^\circ$, $\angle DAC = 35^\circ$ and $\angle CAB = 40^\circ$.

Find (i) $\angle ACD$, (ii) $\angle ACB$, (iii) $\angle DAE$

Watch Video Solution

3. Find all the angles of the given cyclic quadrilateral ABCD in the figure.

View Text Solution

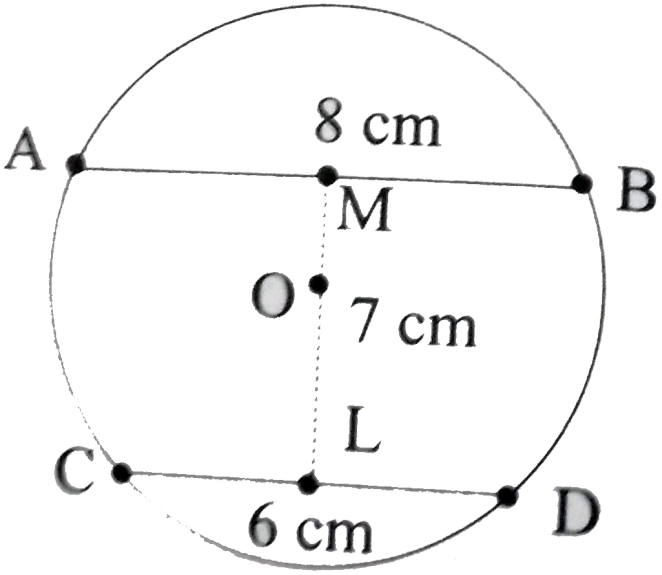
4. In the given figure, ABCD is a cyclic quadrilateral where diagonals intersect at P such that $\angle DBC = 40^\circ$ and $\angle BAC = 60^\circ$

find (i) $\angle CAD$ (ii) $\angle BCD$

Watch Video Solution

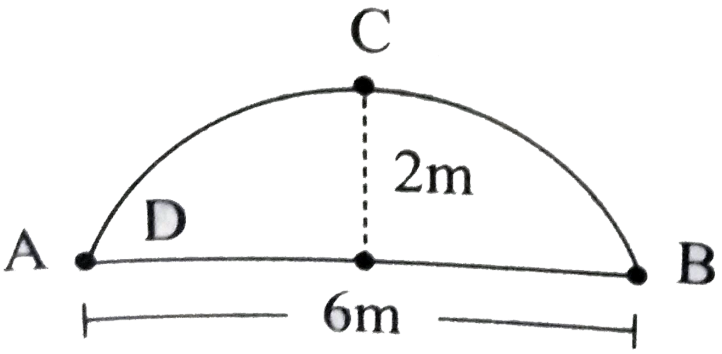
5. In the given figure, AB and CD are the parallel chords of a circle with centre O. Such that AB = 8 cm and CD = 6 cm. If $OM \perp AB$ and $OL \perp CD$ distance becween LM is 7

cm. Find the radius of the circle ?



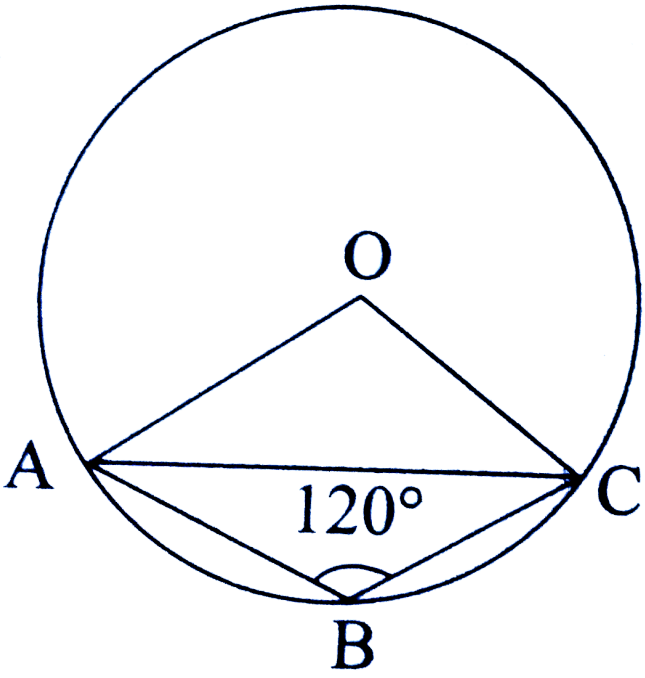
Watch Video Solution

6. The arch of a bridge has dimensions as shown, where the arch measure 2 m at its highest point and width is 6 m. What is the radius of the circle that contains the arch ?



Watch Video Solution

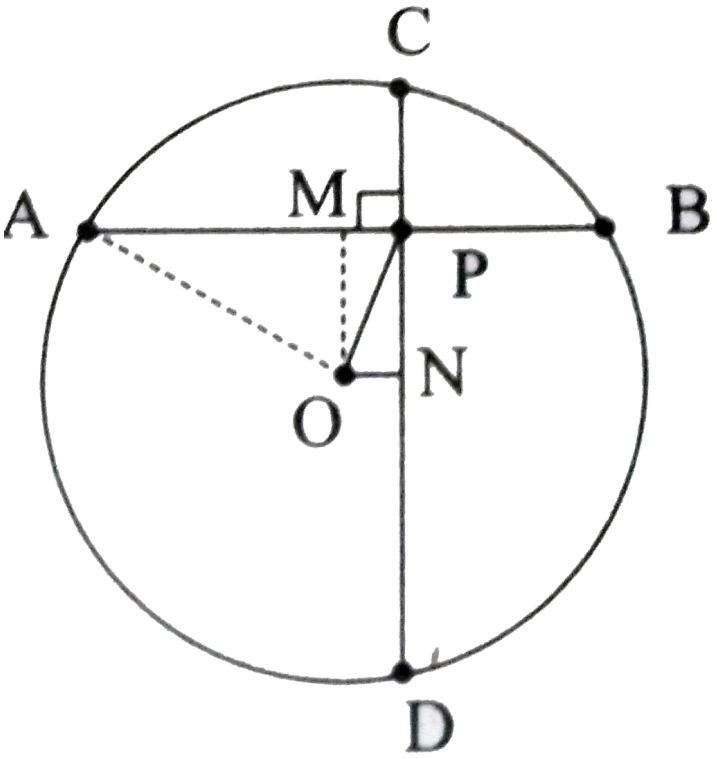
7. In figure $\angle ABC = 120^\circ$, where A,B and C are points on the circle with centre O. Find $\angle OAC$?



Watch Video Solution

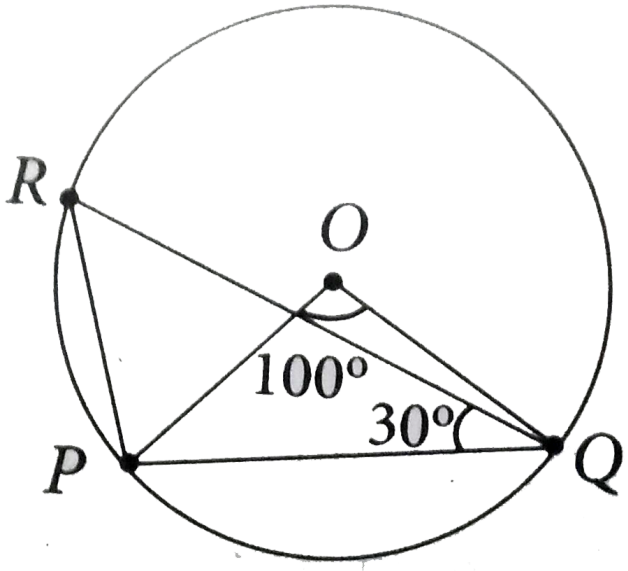
8. A school wants to conduct tree plantation programme. For this a teacher allotted a circle of radius 6m ground to nineth standard students for plating sapplings. Four students plant trees at the points A,B,C and D as shown

in figure. Here AB = 8m, CD = 10 m and $AB \perp CD$. If another student places a flower pot at the point P, the intersection of AB and CD, then find the distance from the centre to P.



Watch Video Solution

9. In the given figure, $\angle POQ = 100^\circ$ and $\angle PQR^\circ = 30^\circ$, then find $\angle RPO$.



Watch Video Solution

Exercise 4 5

1. Construct the $\triangle LMN$ such that LM= 7.5 cm, MN= 5 cm and LN= 8 cm. Locate its centroid.

Watch Video Solution

2. Draw and locate the centroid of the triangle ABC where right angle at A, AB= 4 cm and AC = 3cm.

Watch Video Solution

3. Draw the $\triangle ABC$, where AB = 6cm, $B = 110^\circ$ and AC = 9 cm and construct the centroid.

Watch Video Solution

4. Construct the $\triangle PQR$ such that PQ = 5cm, PR= 6cm and $\angle QPR = 60^\circ$ and locate its centroid.

Watch Video Solution

5. Draw $\triangle PQR$ with sides PQ= 7 cm, QR = 8 cm and PR = 5cm and construct its Orthocentre.

Watch Video Solution

6. Draw and equilateral triangle of side 6.5 cm and locate its orthocentre.

Watch Video Solution

7. Draw $\triangle ABC$, where AB= 6cm, $\angle B = 110^\circ$ and BC = 5 cm and construct its Orthocentre.

Watch Video Solution

8. Draw and locate the Orthocentre of a right triangle PQR where PQ = 4.5 cm, QR = 6cm and PR = 7.5 cm.

Watch Video Solution

Exercise 4 6

1. Draw a triangle ABC, where AB= 8cm, BC= 6cm and $\angle B = 70^\circ$ and locate its circumcentre and draw the

circumcircle.

Watch Video Solution

2. Construct the right triangle PQR whose perpendicular sides are 4.5 cm and 6 cm. Also locate its circumcenter and draw the circumcircle.

Watch Video Solution

3. Construct $\triangle ABC$ with AB= 5 cm $\angle B = 100^\circ$ and BC= 6 cm. Also locate its circumcentre draw circumcircle.

Watch Video Solution

4. Construct an isosceles triangle PQR where PQ = PR and $\angle Q = 50^\circ$, QR = 7 cm. Also draw its circumcircle.

Watch Video Solution

5. Draw an equilateral triangle of side 6.5 cm and locate its incentre. Also draw the incircle.

Watch Video Solution

6. Draw $\triangle ABC$ given AB = 9 cm, $\angle CAB = 115^\circ$ and $\triangle ABC = 40^\circ$. Locate its incenter and also draw the incircle.

Watch Video Solution

7. Construct $\triangle ABC$, in which AB= BC= 6 cm and $B = 80^\circ$. Locate its in centre and draw the incircle.

Watch Video Solution

Exercise 4 7 I Multiple Choice Questions

1. The exterior angle of a triangle is equal to the sum of two

A. Exterior angles

B. Interior opposite angles

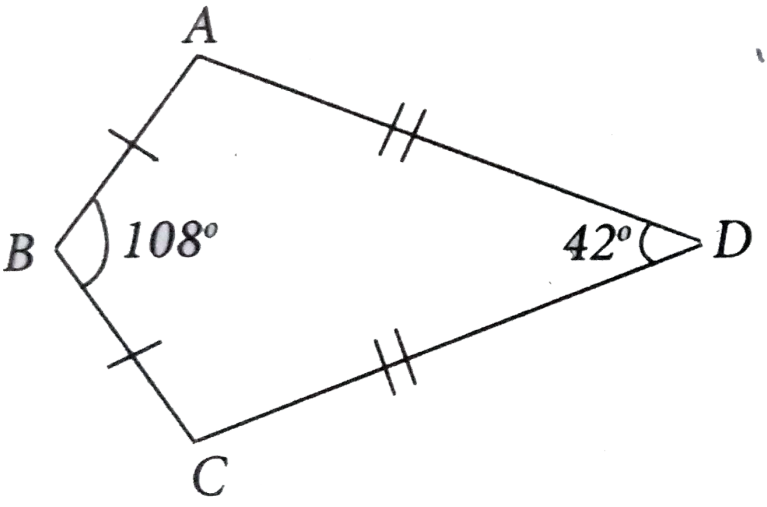
C. Alternate angles

D. Interior angles

Answer: B

Watch Video Solution

2. In the quadrilateral ABCD, AB=BC and AD=DC Measure of $\angle BCD$ is .....



A. 150°

B. 30°

C. 105°

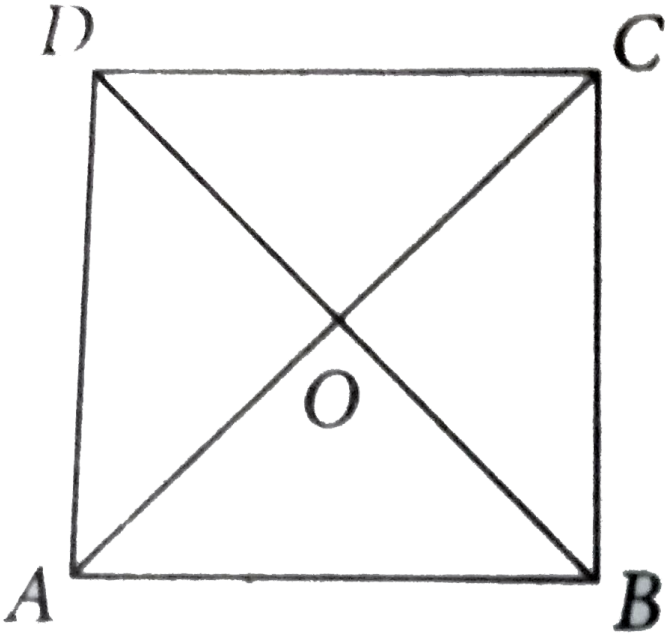
D. 72°

Answer: C

Watch Video Solution

3. ABCD is a square, diagonals AC and BD meet at O. The number of pairs of congruent triangles with vertex O are .

. . . . . .



A. 3

B. 8

C. 4

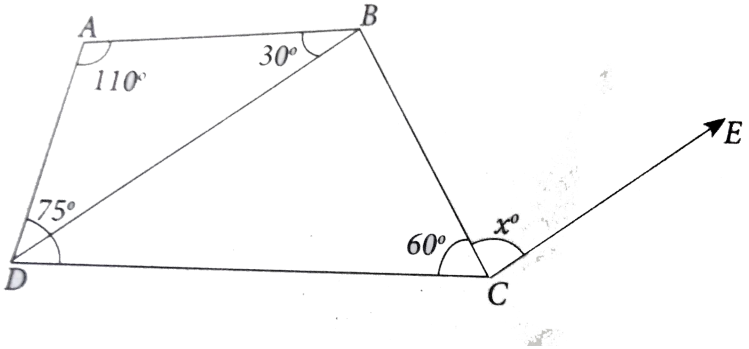
D. 12

Answer: A

Watch Video Solution

4. In the given figure $CE \| DB$ then value of x° is .....

....



A. 45°

B. 30°

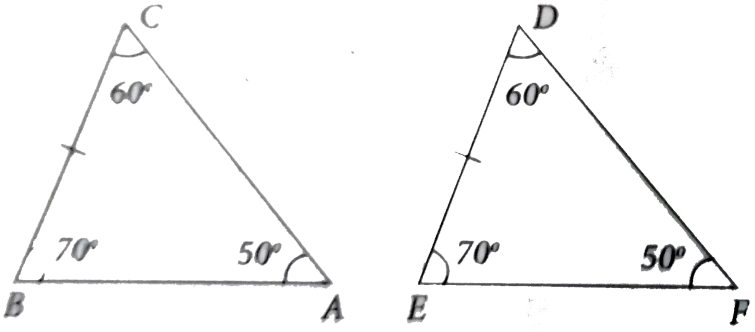
C. 75°

D. 85°

Answer: D

Watch Video Solution

5. The correct statement out of the following is .....



A. $\Delta ABC \cong \Delta DEF$

B. $\Delta ABC \cong \Delta EDF$

C. $\Delta ABC \cong \Delta FDE$

D. $\Delta ABC \sim \equiv \Delta FED$

Answer: D

Watch Video Solution

6. If the diagonal of a rhombus are equal, then the rhombus is a

A. Parallelogram but not a rectangle

B. Rectangle but a square

C. Square

D. Parallelogram but not a square

Answer: C

Watch Video Solution

7. If bisectors of $\angle A$ and $\angle B$ of a quadrilateral ABCD meet at O, then $\angle AOB$ is

A. $\angle C + \angle D$

B. $\frac{1}{2}\angle C + \frac{1}{3}\angle D$

C. $\frac{1}{2}\angle C + \frac{1}{3}\angle D$

D. $\frac{1}{3}\angle C + \frac{1}{2}\angle D$

Answer: B

Watch Video Solution

8. The interior angle made by the side in a parallelogram is 90° then the parallelogram is a

A. rhombus

B. Rectangle but a square

C. trapezium

D. kite

Answer: B

Watch Video Solution

9. Which of the following statement is correct?

A. Opposite angles of a parallelogram are not equal

B. Adjacentangles of a parallelogram are complementary

C. Diagonals of a parallelogram are always equal.

D. Both pairs of opposite sides of a parallelogram are always equal.

Answer: D

Watch Video Solution

10. The angles of the triangles are 3x-40, x+20 and 2x-10 then the value of x is

A. 40°

B. 35°

C. 50°

D. 45°

Answer: B

Watch Video Solution

11. PQ and RS are two equal chords of a circle with centre O such that $\angle POQ = 70^\circ$, then $\angle ORS$ = ...

A. 60°

B. 70°

C. 55°

D. 80°

Answer: C

Watch Video Solution

12. A chord is at distance of 15 cm from the centre of the circle of radius 25 cm. The length of the chord is . . . . . .

A. 25 cm

B. 20 cm

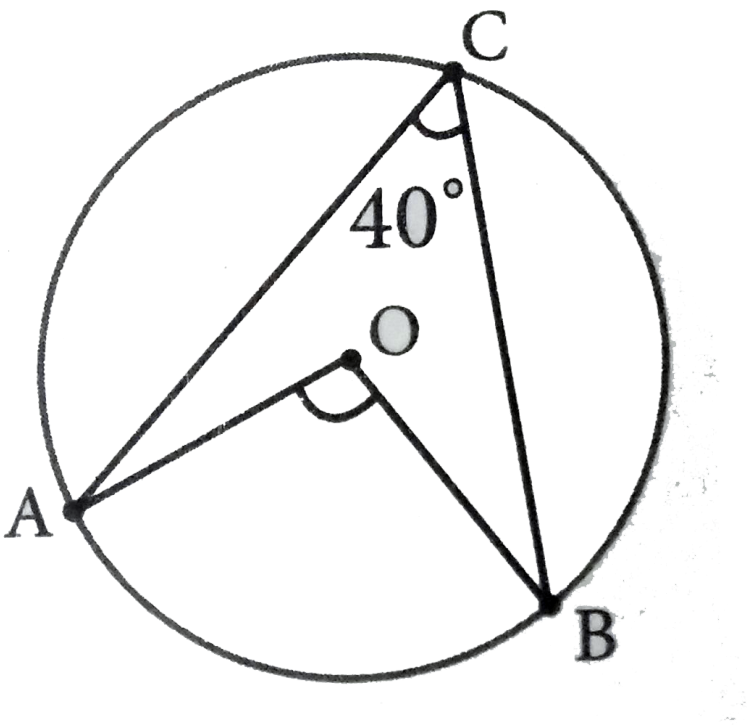
C. 40 cm

D. 18 cm

Answer: C

Watch Video Solution

13. In the figure, O is the centre of the circle and $\angle ACB = 40^\circ$ then $\angle AOB$ = ...



A. 80°

B. 85°

C. 70°

D. 65°

Answer: A

Watch Video Solution

14. In a cyclic quadrilaterals ABCD, $\angle A = 4x, \angle C = 2x$ the value of x is .....

A. 30°

B. 20°

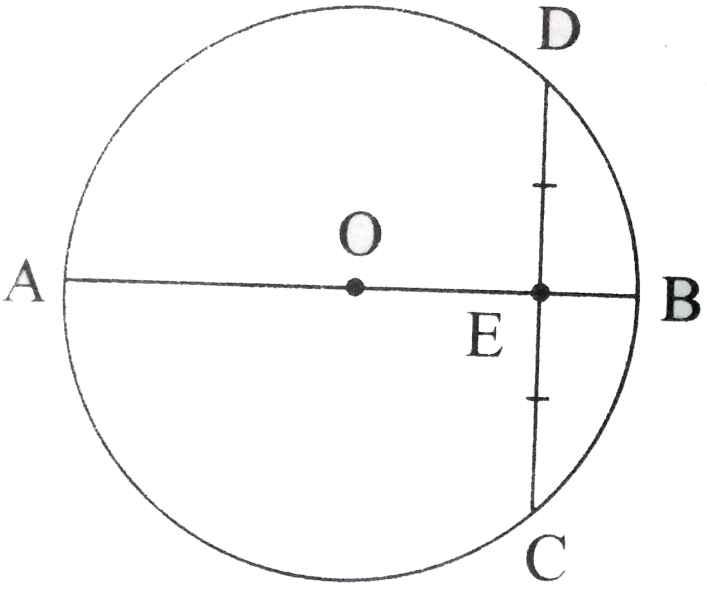
C. 15°

D. 25°

Answer: A

Watch Video Solution

15. In the figure, O is the centre of a circle and diameter AB bisects the chord CD at a point E such that $CE = ED = 8$ cm and $EB = 4$ cm. The radius of the circle is .....



A. 8 cm

B. 4 cm

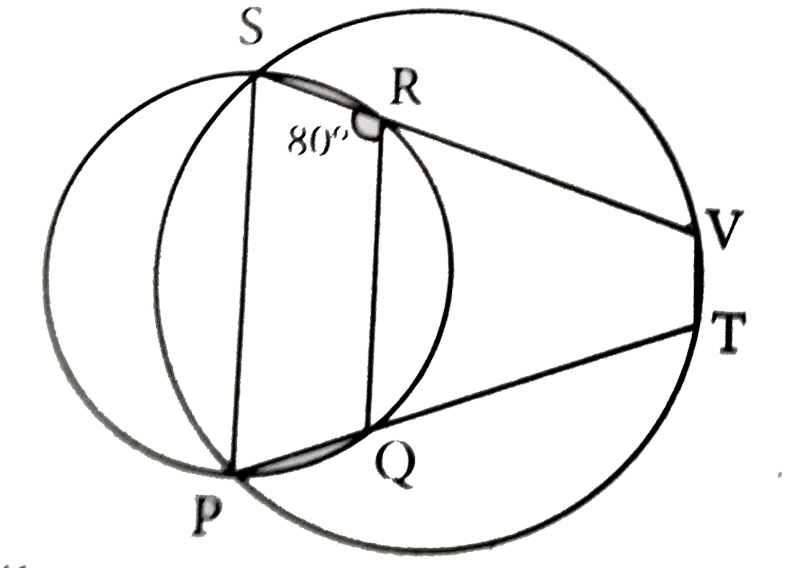
C. 6 cm

D. 10 cm

Answer: D

Watch Video Solution

16. In the figure, PQRS and PTVS are two cyclic quadrilaterals, If $\angle QRS = 80^\circ$, then $\angle TVS$ = ...



A. 80°

B. 100°

C. 70°

D. 90°

Answer: A

Watch Video Solution

17. If one angle of a cyclic quadrilateral is 75°, then the opposite angle is .....

A. 100°

B. 105°

C. 85°

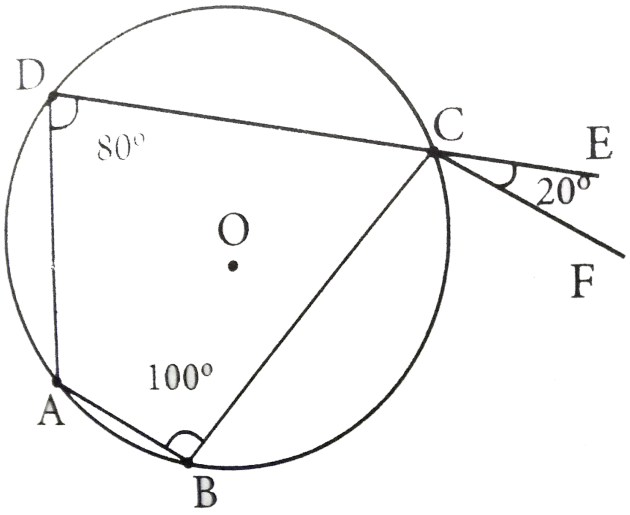
D. 90°

Answer: B

Watch Video Solution

18. In the figure, ABCD is a cyclic quadrilateral in which DC produced to E and CF is drawn parallel to AB such that

$\angle ADC = 80^\circ$ and $\angle ECF = 20^\circ$, then BAD = ?



A. 100°

B. 20°

C. 120°

D. 11°

Answer: C

Watch Video Solution

19. AD is a diameter of a circle and AB is a chord. If AD= 30 cm and AB = 24 cm then the distance of AB from the centre of the circle is

A. 10 cm

B. 9 cm

C. 8 cm

D. 6 cm

Answer: B

Watch Video Solution

20. In the given figure, If OP= 17 cm PQ= 30 cm and OS is perpendicular to PQ, then RS is

A. 10 cm

B. 6 cm

C. 7 cm

D. 9 cm

Answer: D

Watch Video Solution

Prograss Check Answer The Following Question

1. Are the opposite angles of a rhombus equal ?

Watch Video Solution

2. A quadrilateral is a . . . . . If a pair of opposite sides are equal and parallel.

Watch Video Solution

3. Are the opposite sides of a kite equal ?

Watch Video Solution

4. Which is an equiangular but not an equilateral parallelogram ?

Watch Video Solution

5. which is an equilateral but an not an equiangular parallelogram ?

Watch Video Solution

6. Which is an equilateral and equiangular parallelogram ?

Watch Video Solution

7. . . . . Is a rectangle, a rhombus and a parallelogram .

Watch Video Solution

Prograss Check

1. State the reasons for the following.

(i) A square is a special kind of a rectangle.

(ii) A rhombus is a special kind of a parallelogram.

(iii) A rhombus and a kite have one common property.

(iv) A square and a rhombus have one common property.

Watch Video Solution

2. What type of quadrilateral is formed when the following pairs of congruent triangles are joined together ?

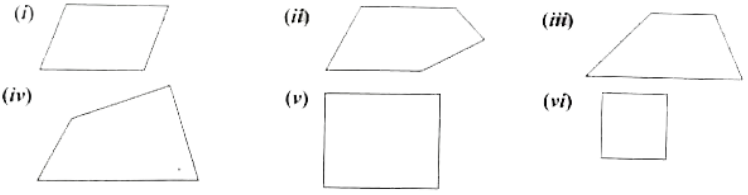
(i) Equilateral triangle .

(ii) Right angled triangle.

(iii) Isosceles triangle.

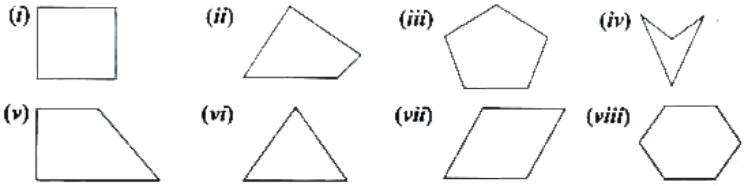
Watch Video Solution

3. Identify which ones are parallelograms and whoch are not



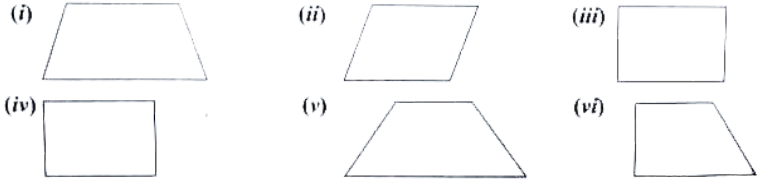
Watch Video Solution

4. Which ones are not quadrilaterals ?



Watch Video Solution

5. Indentify which ones are trapeziums and which are not.



Watch Video Solution

6. The radius of the circle is 25 cm and the length of one of its chord is 40 cm. Find the distance of the chord from the centre.

Watch Video Solution

7. Draw three circles passing through the points P and Q, where PQ=4 cm

Watch Video Solution

8. Draw the outline of different size of bangles and try to find out centre to each using set square.

Watch Video Solution

9. Trace the given cresent and complete as full moon using ruler and compass.

Watch Video Solution

10. If the sum of any pair of opposite angles of a quadrilateral is 180°; then the quadrilateral is cyclic.

Watch Video Solution

11. As the length of the chord decreases, the distance from the centre increases.

Watch Video Solution

12. If one side of a cyclic quadrilateral is produced; then the exterior angle is equal to the interior opposite angle.

Watch Video Solution

13. The sum of either pair of opposite angles of a cyclic quadrilateral is 180^0 OR The opposite angles of a cyclic quadrilateral are supplementary.

Watch Video Solution

Prograss Check True Or False

1. Every chord of a circle contains exactly two points of the circle .

Watch Video Solution

2. All radii of a circle are of same length.

Watch Video Solution

3. Every radius of a circle is a chord

Watch Video Solution

4. Every chord of a circle is a diameter.

Watch Video Solution

5. Every diameter of a circle is a chord

Watch Video Solution

6. There can be any number of diameters for a circle

Watch Video Solution

7. Two diameters cannot have the same end - point

Watch Video Solution

8. A circle divides the plane into three disjoint parts.

Watch Video Solution

9. A circle can be partitioned into a major arc and a minor arc.

Watch Video Solution

10. The distance from the centre of a circle to the circumference is that of a diameter.

Watch Video Solution

Thinking Corner

1. Draw four congruent circles as shown. What do you infer ?

Watch Video Solution

2. How many sides does a circle have ?

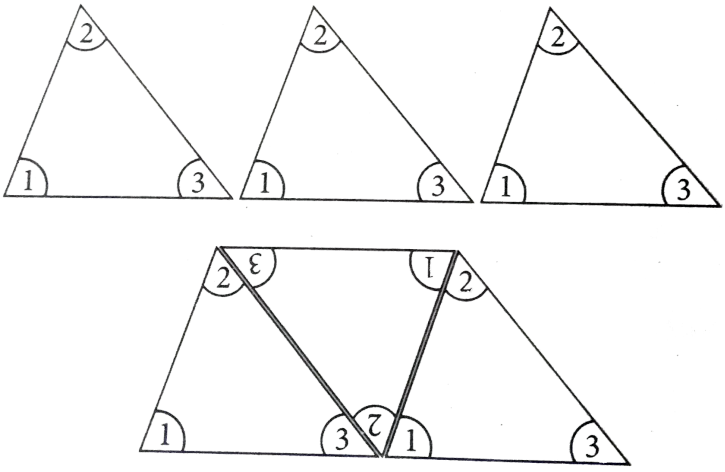
Watch Video Solution

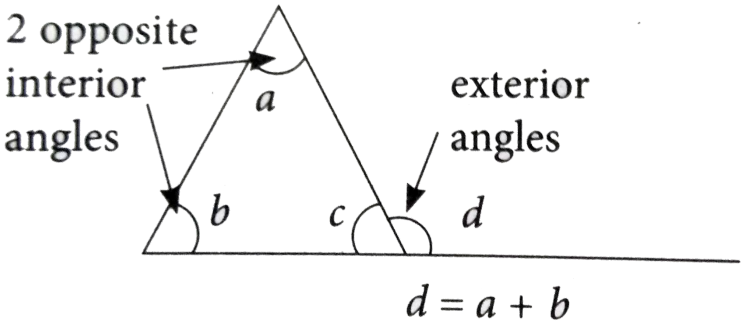
3. Is circle, a polygon ?

Watch Video Solution

Activity 1

1. Take three different colour sheets , place one over the other and draw a triangle on the top sheet. Cut the sheets to get triangles of different colour which are identical. Mark the vertices and the angles as shown. Place the interior angles $\angle 1, \angle 2$ and $\angle 3$ on a straight line, adjacent to each other, without leaving any gap. What can you say about the total measure of the three angles $\angle 1, \angle 2$ and $\angle 3$?





$$d = a + b$$

Can you use the same figure to explain the "Exterior angle property" of a triangle ? If a side of a triangle is stretched, the exterior angle so formed is equal to the sum of the two remote interior angles.

Watch Video Solution

Activity 2

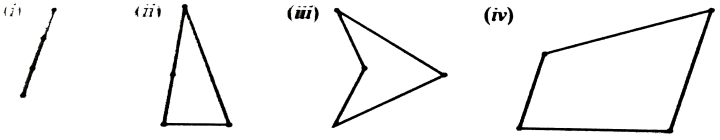
1. Four Tamil Nadu State transport buses take the following routes. The first is a one - way journey, and the rest are round trips. Find the places on the map, put points on them and connect them by lines to draw the routes. The places connecting four different routes are given as follows.

(i) Nagercoil, Tiruneveli, Virudhnagar, Madurai

(ii) Sivagangai, Puthukottai, Thanjavur, Dindigul

(iii) Erode, Coimbatore, Dharmapuri, karur

(iv) Chennai, Cuddalore, Krishnagiri, Vellore You will get the following shapes.



Label the vertices with city names, draw the shapes exactly as they are shown on the map without rotations.

Watch Video Solution

Activity 4

1. Angle sum for a polygon

Draw any quadrilateral ABCD.

Mark a point P in its interior.

Join the segments PA, PB, PC and PD

You have 4 triangles now.

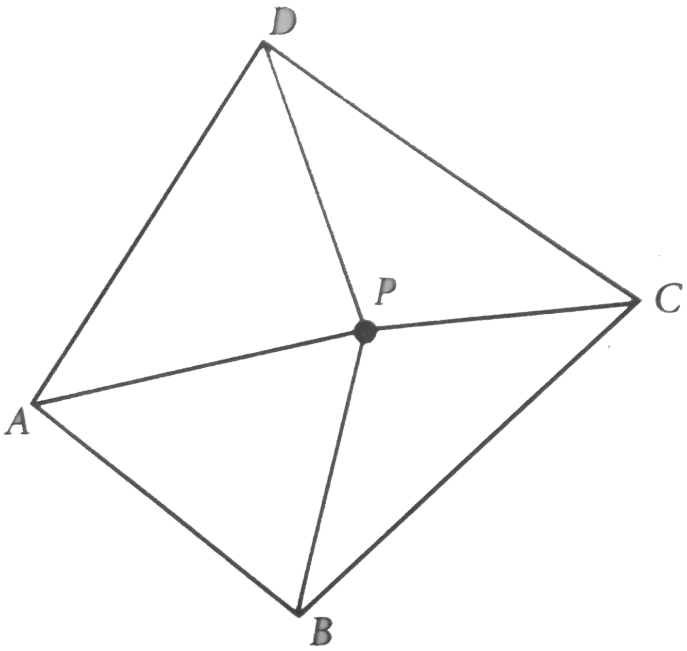
How much is the sum of all the angles of the 4 triangles ?

How much is the sum of the angles at P ?

Can you now find the 'angle sum' of the quadrilateral

ABCD ?

Can you extend this idea to any polygon ?



Watch Video Solution

Activity 5

1. Procedure :

(i) Draw a circle with centre O and with suitable radius.

(ii) Make it a semi - circle through folding . Consider the poin A,B on it

(iii) Make crease along AB in the semi circles and open it.

(iv) We get one more crease line on the another part of semi circle, name it as CD (observe AB= CD)

(v) Join the radius to get the ΔOAB and ΔOCD.

(vi) Using trace paper, take the replicas of triangle ΔOAB and ΔOCD

(vii) Place these triangles ΔOAB and ΔOCD one on the other.

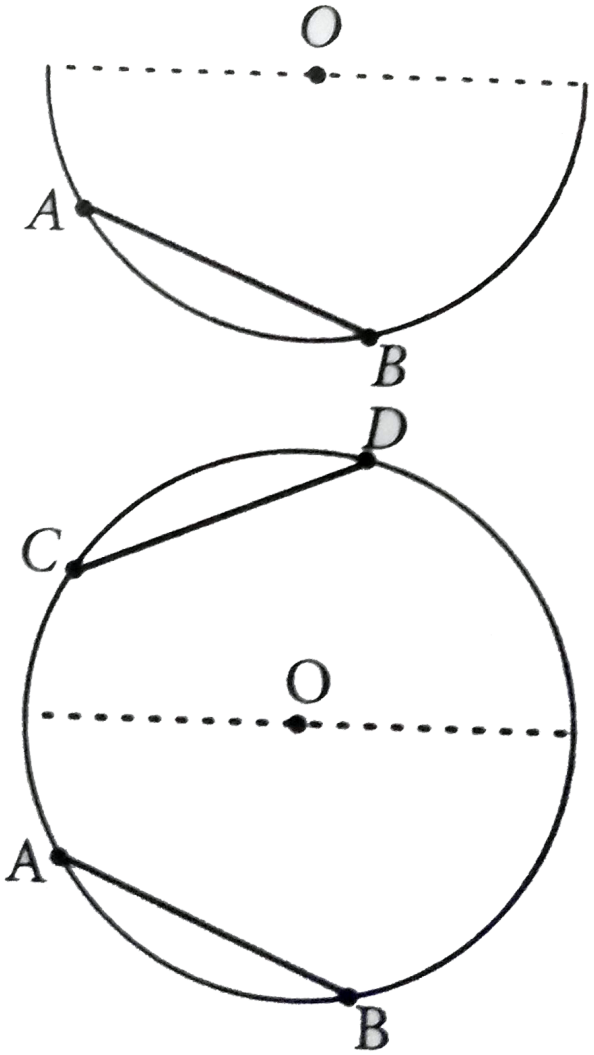
Observation :

(i) What do you observe ? Is $\Delta OAB \equiv \Delta OCD$?

(ii) Construct perpendicular line to the chords AB and CD

passing through the centre O. Measure the distance from

O to the chords



Watch Video Solution

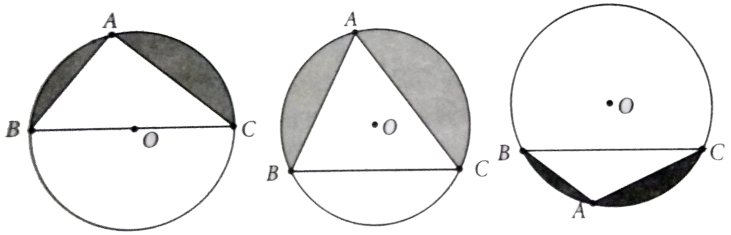
Activity 6

1. Procedure :

(i) Draw three circles of any radius with centre O on chart paper.

(ii) From these circles, cut a semi - circle, a minor segment and a major segment

(iii) Consider three points on these segment and name them as A,B, and C



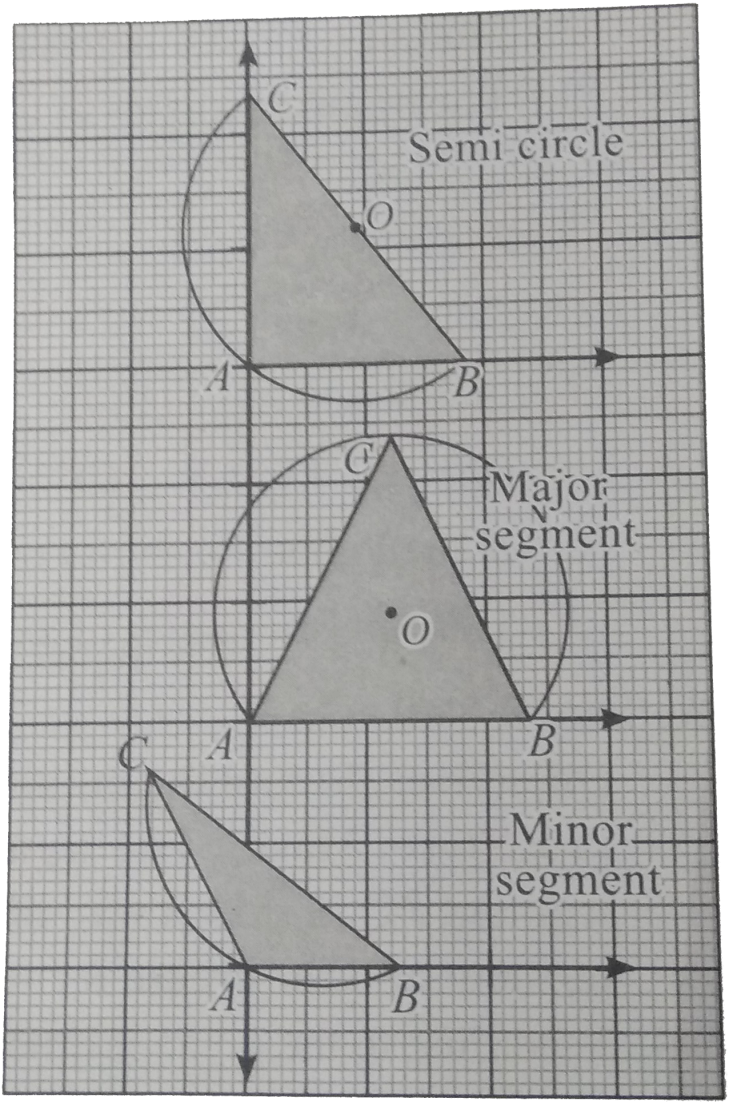
(iv) Cut the triangles and paste it the graph sheet so that the point A coincides with the origin as shown in the figure.

Ovservation :

(i) Angle in a Semi - Circle is . . . . . angle.

(ii) Angle in a major segment is angle.

(iii) Angle in minor segment is . . . . . angle.



Watch Video Solution

Activity 7

1. Procedure :

(i) Draw a circle of many radius with centre O.

(ii) Mark any four points A,B,C and D on the boundary. Make a cyclic quadrilateral ABCD and name the angles as in Fig. 1

(iii) Make a replica of the cyclic quadrilateral ABCD with the help of tracing paper

(iv) Make the cutout of the angles A,B,C and D as in Fig. 2

(v) Paste the angle cutout $\angle 1$, $\angle 2$, $\angle 3$ and $\angle 4$ adjacent to the angles opposite to A,B,C and D as in Fig . 3

Measure the angles $\angle 1 + \angle 3$, and $\angle 2 + \angle 4$.

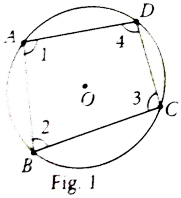


Fig. 1

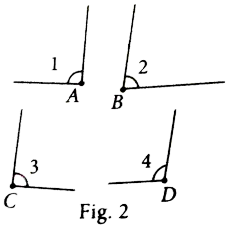


Fig. 2

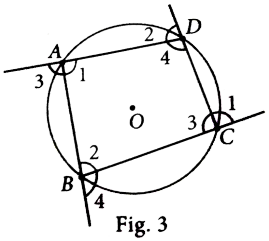


Fig. 3

Observe the Fig. 3 and complete the following :

(i) $\angle A + \angle C = \ldots\ldots$ (ii) $\angle B + \angle D = \ldots\ldots$

(iii) $\angle C + \angle A = \ldots\ldots$ (iv) $\angle D + \angle B = \ldots\ldots$

2. Sum of opposite angles of a cyclic quadrilateral is $\ldots\ldots$

. .

3. The opposite angles of a cyclic quadrilateral is $\ldots\ldots$

Watch Video Solution

Activity 8

1. Objective : To find the mid - point of a line segment using paper folding Procedure : make a line segment on a paper by folding it and name it PQ. Fold the line segment PQ in such a way that P falls on Q and mark the point of intersection of the line segment and crease formed by folding the paper as M. M is the midpoint of PQ.

Watch Video Solution

Activity 9

1. Objective : To construct a perpendicular to a line segment from as external point using paper folding. Procedure : Draw a line segment AB and mark an external

point P. Move B along BA till the fold passes through P and crease it along that line. The crease thus formed is the perpendicular to AB through the external point P.

Watch Video Solution

Activity 10

1. Objective : To locate the Orthocentre of a triangle using paper folding.

Procedure : Using the above Activity with any two vertices of the triangle as external points, construct perpendiculars to opposite sides. The point of intersection of the perpendiculars is the Orthocentre of the given triangle.

Watch Video Solution

Activity 11

1. Objective : To construct a perpendicular bisector of a line segment using paper folding

Procedure : Make a line segment on a paper by folding it and name it as PQ. Fold PQ in such a way that P falls on Q and thereby creating a creas RS. This line RS is the perpendicular bisector of PQ.

Watch Video Solution

Activity 12

1. Objective : To locate the circumcentre of a triangle using paper folding.

Procedure : Using Activity 12, find the perpendicular bisectors for any two sides of the given triangle. The meeting point of these is the circumcentre of the given triangle.

Watch Video Solution

Additional Questions I Multiple Choice Question

1. The angle sum of a convex polygon with number of sides 7 is . . . . . .

A. 900°

B. $108.^\circ$

C. 1444°

D. 720°

Answer: A

Watch Video Solution

2. What is a regular polygon? State the name of a regular polygon of 3 sides (ii) 4 sides (iii) 6 sides

A. Square

B. Equilateral triangle

C. Regular hexagon

D. Regular octagon

Answer: C

Watch Video Solution

3. One angle of a parallelogram is a right. The name of the quadrilateral is . . . . .

A. square

B. Rectangle but a square

C. rhombus

D. kite

Answer: B

Watch Video Solution

4. If all the four sides of a parallelogram are equal and the adjacent angles are of 120° and 60° then the name of the quadrilateral is .....

A. rectangle

B. square

C. rhombus

D. kite

Answer: C

Watch Video Solution

5. In a parallelogram $\angle A : \angle B = 1 : 2$. Then $\angle A$ .....

A. 30°

B. 60°

C. 45°

D. 90°

Answer: B

Watch Video Solution

6. Which of the following is a formula to find the sum of interior angles of a quadrilateral of n-sides ?

A. $\frac{n}{2} \times 180$

B. $\left(\frac{n+1}{2}\right)180^\circ$

C. $\left(\frac{n-1}{2}\right)180^\circ$

D. $(n-2)180^\circ$

Answer: D

Watch Video Solution

7. Diagonal of which of the following quadrilaterals do not bisect it two congruent triangles ?

A. rhombus

B. trapezium

C. square

D. rectangle

Answer: B

Watch Video Solution

8. The point of concurrence of medians of a triangle is called centroid.

A. circumcentre

B. incentre

C. orthocentre

D. centroid

Answer: D

Watch Video Solution

9. Orthocentre of a triangle is the point of concurrency of

. . . .

A. medians

B. altitudes

C. angle bisectors

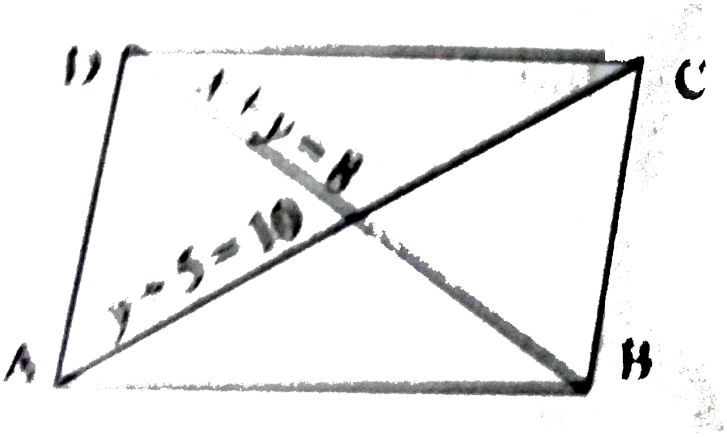
D. perpendicular bisectors of side

Answer: B

Watch Video Solution

10. ABCD is a parallelogram as shown.

Find x and y.



Watch Video Solution

11. A circle divides the plane into . . . . . .part.

A. 1

B. 2

C. 3

D. 4

Answer: C

Watch Video Solution

12. The longest chord of a circle is a . . . . . Of the circle.

A. radius

B. diameter

C. chord

D. secant

Answer: B

Watch Video Solution

13. In order to prove 'Opposite angles of a cyclic quadrilateral are supplementary .'

(1) Draw a neat labelled figure.

(2) Write 'Given ' and 'To prove' from the figure drawn by you.

A. supplementary

B. complementary

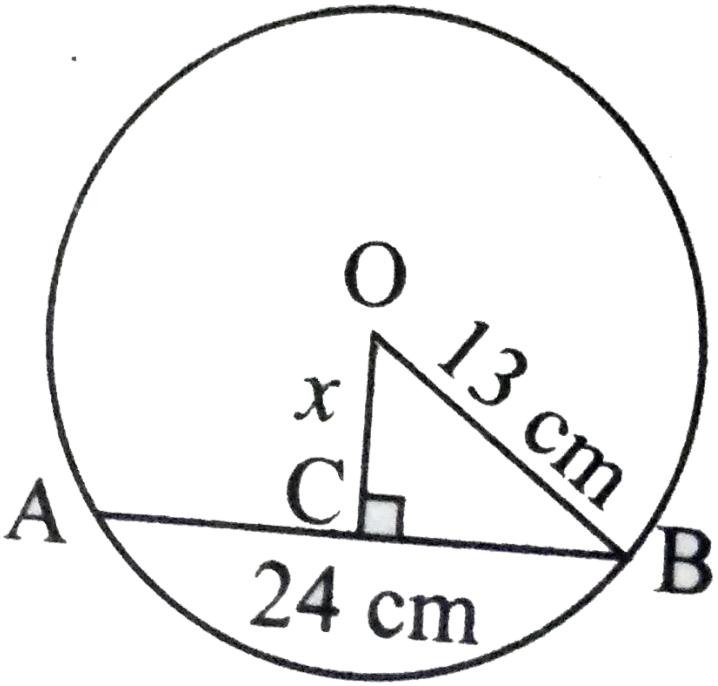
C. equal

D. none of these

Answer: A

Watch Video Solution

14. The value of x from figure is . . . . . If 'O' is the centre of the circle



A. 20 cm

B. 15 cm

C. 12 cm

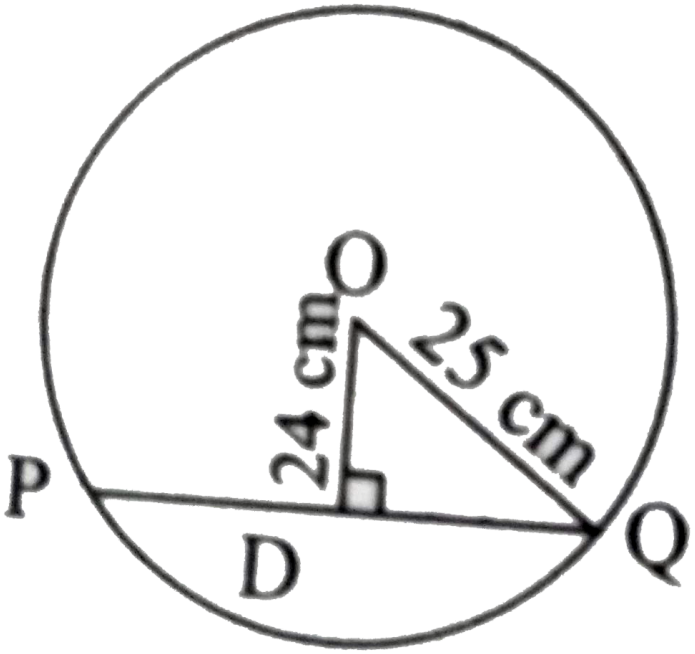
D. 5 cm

Answer: D

Watch Video Solution

15. If PQ = x and 'O' is the centre of the circle, then x = ...

. . . .



A. 7 cm

B. 14 cm

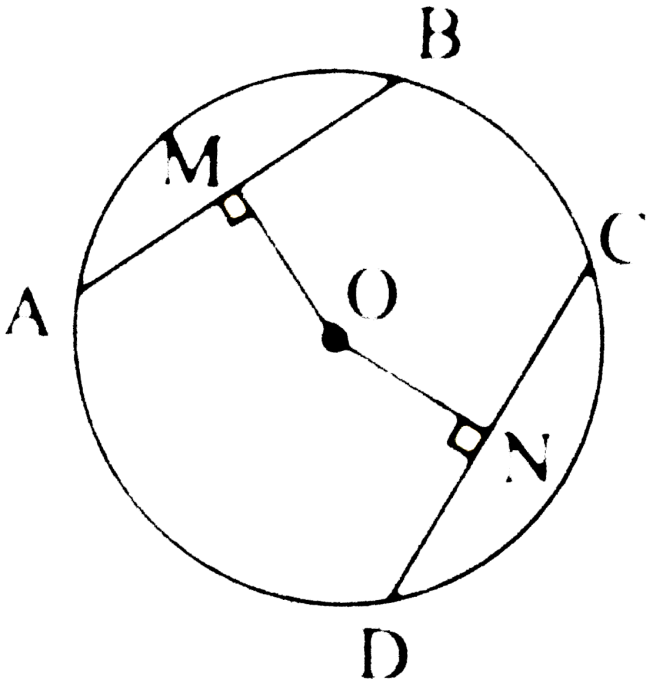
C. 8 cm

D. 13 cm

Answer: B

Watch Video Solution

16. In figure $OM = ON = 8cm$ and $AB = 30cm$, then CD = ...



A. 15 cm

B. 30 cm

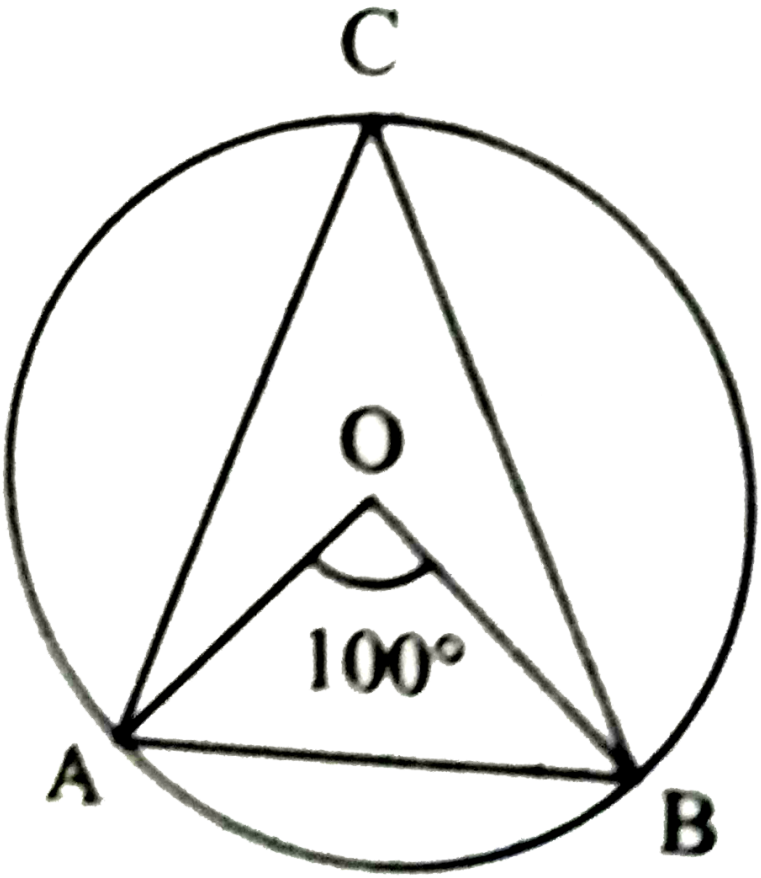
C. 40 cm

D. 10 cm

Answer: B

Watch Video Solution

17. O is the centre of a circle, $\angle AOB = 100^\circ$. Then angle $\angle ACB$ = ...



A. 80°

B. 40°

C. 50°

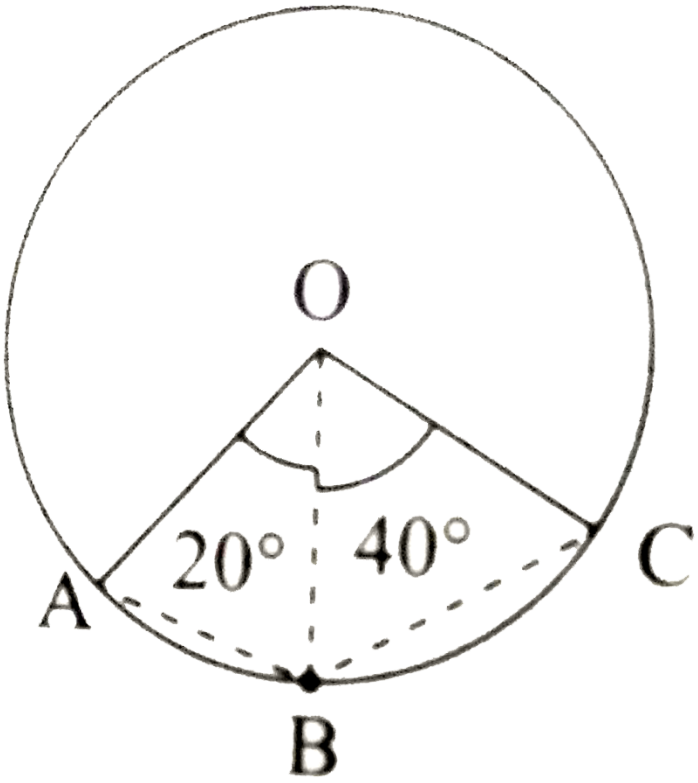
D. 60°

Answer: C

Watch Video Solution

18. In,a circle, with center O, $\angle AOB = 20^\circ$, $\angle BOC = 40^\circ$, arc BC = 4 cm.

Then length of arc AB will be . . . . . .



A. 8 cm

B. 6 cm

C. 2 cm

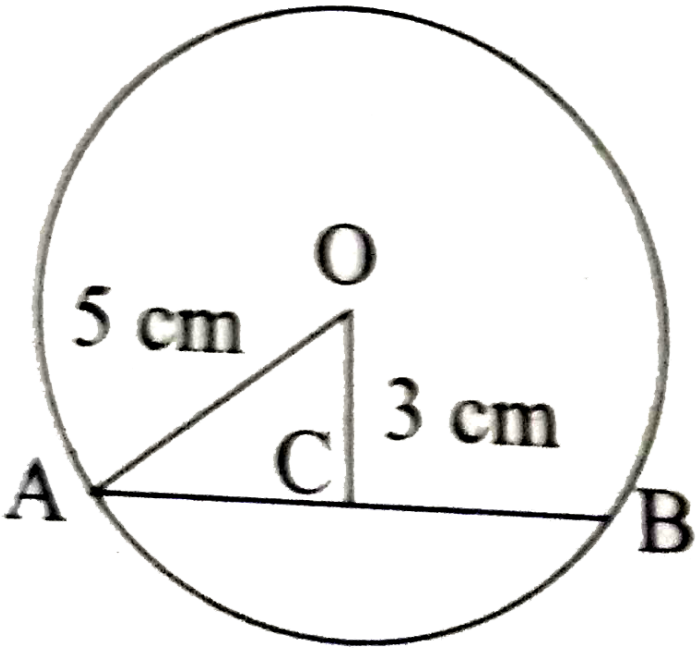
D. 1 cm

Answer: C

Watch Video Solution

19. In the figure, OC=3 cm and radius of circle is 5 cm

Then AB = ...



A. 4 cm

B. 5 cm

C. 6 cm

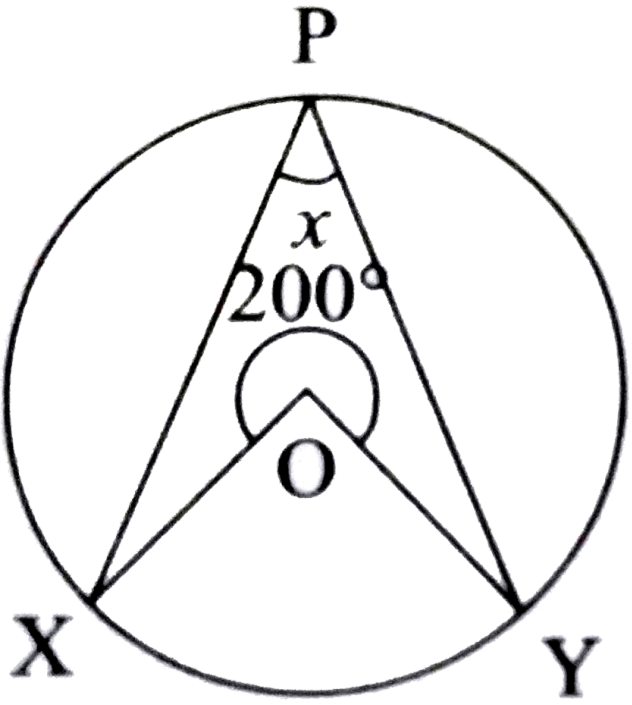
D. 8 cm

Answer: D

Watch Video Solution

Watch Video Solution

20. O is the centre of the circle. The value of x in the given diagram is .....



A. 100°

B. 160°

C. 200°

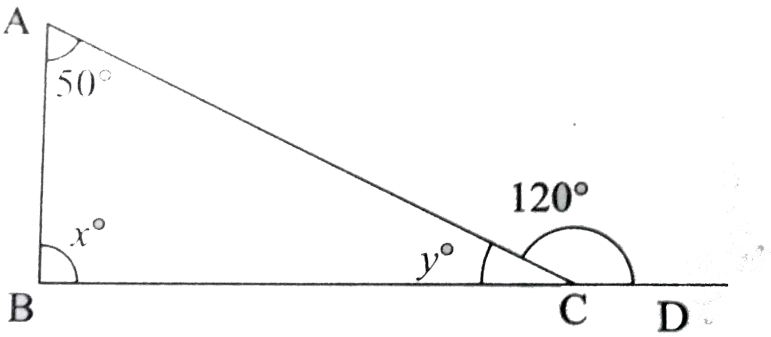
D. 80°

Answer: D

Watch Video Solution

Additional Questions Ii Answer The Following Questions

1. In the figure find x° and y°



Watch Video Solution

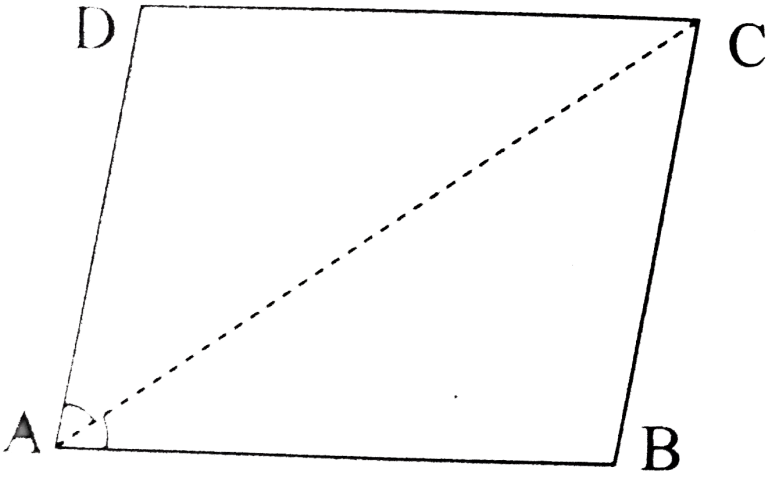
2. The angles of quadrilateral are in the ratio $3:5:9:13$.

Find the angles of the quadrilateral.

Watch Video Solution

3. Diagonal AC of a parallelogram ABCD bisects $\angle A$. Show that

(i) it bisects $\angle C$ alo (ii) ABCD is a rhombus.



Watch Video Solution

4. ABCD is a parallelogram and AP and CQ are perpendiculars from vertex A and C on diagonal BD.

Show that (i) $\Delta APB \cong \Delta CQD$ (ii) $AP = CQ$.

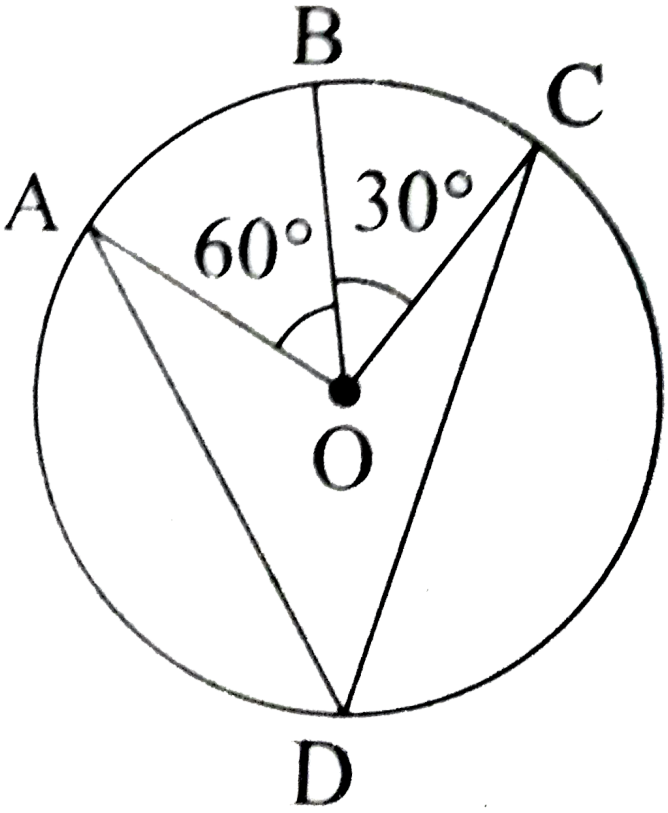
Watch Video Solution

5. ABCD is a rectangle and P,R and S are the mid - points of the AB, BC, CD and DA respectively. Show that the quadrilateral PQRS is a rhombus.

Watch Video Solution

6. In the figure A,B and C are three points on a circle with centre O such that $\angle BOC = 30^\circ$ and $\angle AOB = 60^\circ$. If D is a point on the circle other than the arc ABC, find

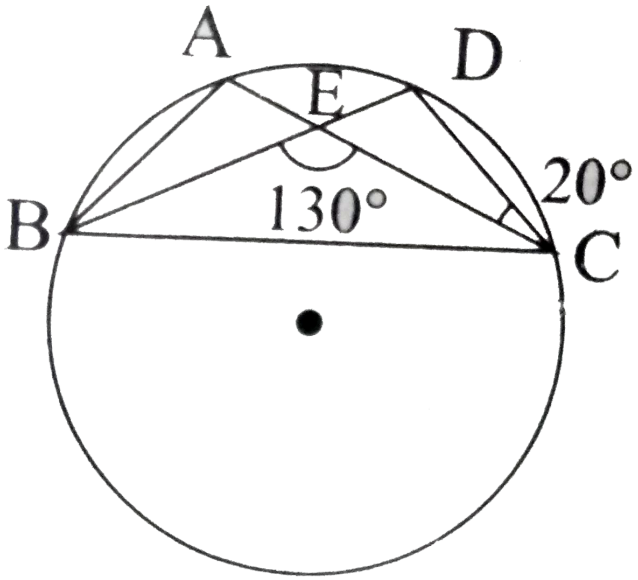
$\angle ADC$.



Watch Video Solution

7. In the given figure A,B,C and D are four points on a circle, AC and BD intersect at a point E such that

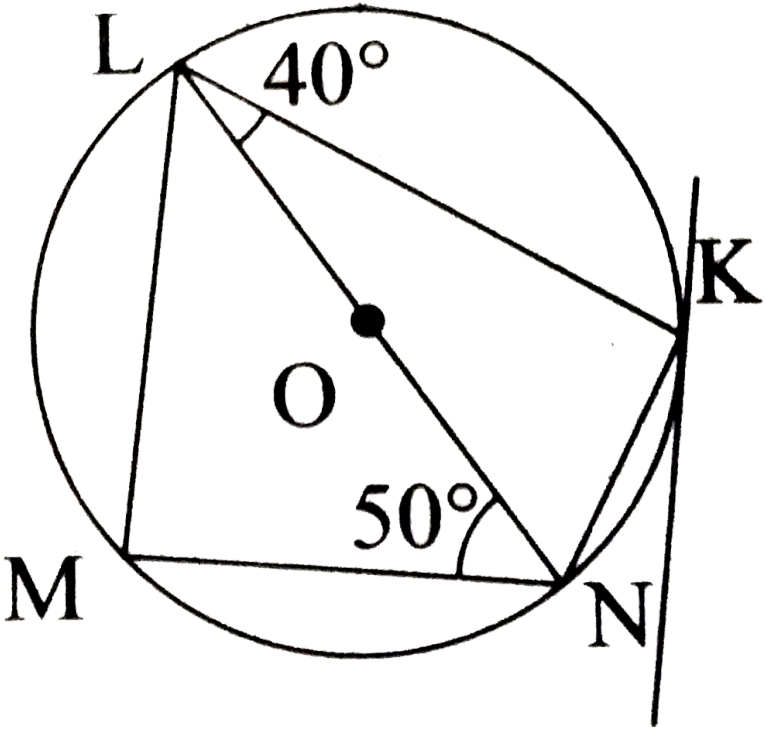
$\angle BEC = 130^\circ$ and $\angle ECD = 20^\circ$. Find $\angle BAC$.



Watch Video Solution

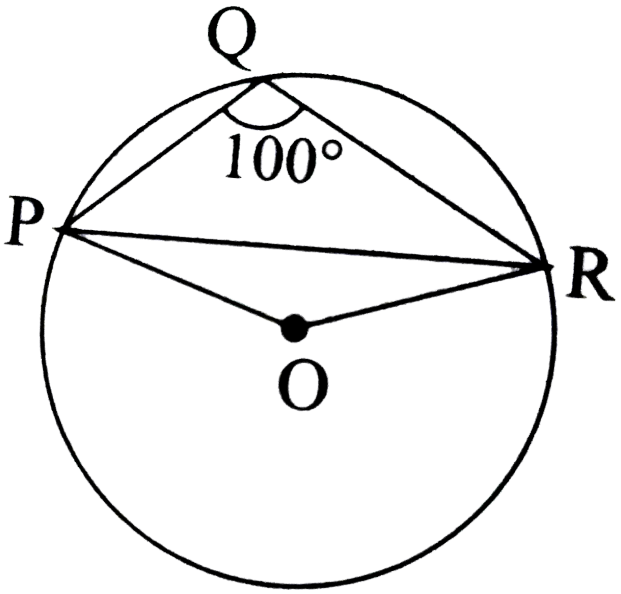
8. In the given figure KLMN is a cyclic quadrilateral. KD is the tangent at K. If $\angle N$ is a diametar $\angle NLK = 40^\circ$ and

$\angle LNM = 50^\circ$. Find $\angle MLN$ and $\angle DKL$.



View Text Solution

9. In the given figure $\angle PQR = 100^\circ$, where P,Q and R are points on a circle with centre 'O' Find $\angle OPR$.



Watch Video Solution

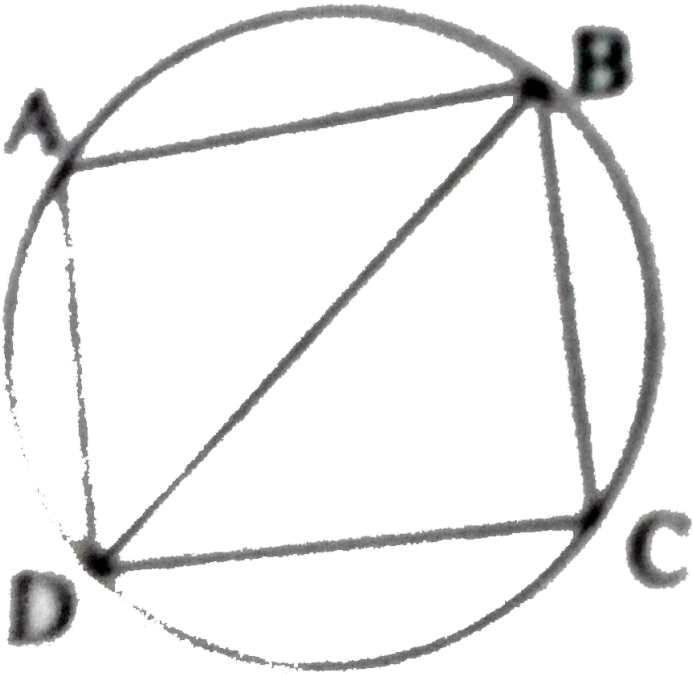
10. AB and CD are two parallel chords of a circle which are on opposite sides of the centre such that AB $= 10cm$, CD $= 24$ cm and the distance between AB and CD is 17cm. Find the radius of the circle.

Watch Video Solution

Assignment I Choose The Correct Answer

1. ABCD is a cyclic quadrilateral. Given that $\angle ADB + \angle DAB = 120^\circ$ and

$\angle ABC + \angle BDA = 145^\circ$. Find the value of $\angle CDB$.



A. 75°

B. 115°

C. 35°

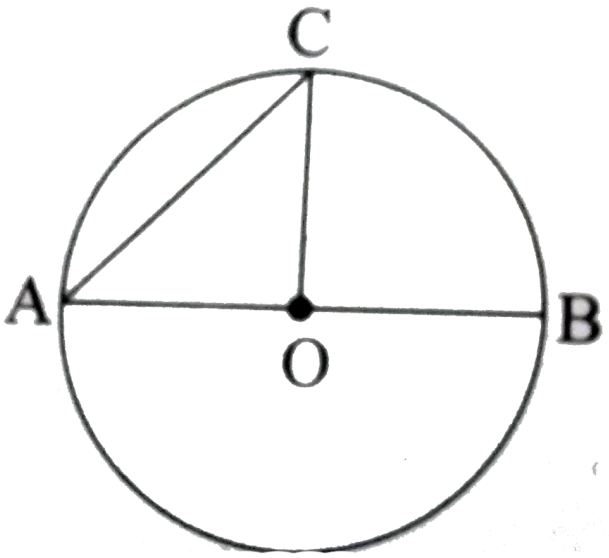
D. 45°

Answer: C

Watch Video Solution

2. In the given figure, AB is one of the diameters of the circle and OC is perpendicular to through the centre O. If

AC is $9\sqrt{2}$ cm then what is the area of the circle in cm^2.



A. $9\pi cm^2$

B. $162\pi cm^2$

C. $72\pi cm^2$

D. $81\pi cm^2$

Answer: D

Watch Video Solution

3. Angle in a semi - circle is . . . . . .

A. an acute angle

B. an obtuse angle

C. a right angle

D. a reflex angle

Answer: C

Watch Video Solution

4. Angle in a minor segment is . . . . . .

A. an acute angle

B. an obtuse angle

C. a right angle

D. a reflex angle

Answer: B

Watch Video Solution

5. Angle in major segment . . . ..

a. An acute angle

b. An obtuse angle

c. Right angle

d. Reflex angle

A. an acute angle

B. an obtuse angle

C. a right angle

D. a reflex angle

Answer: A

Watch Video Solution

Assignment Ii Match The Following

1. Match the following

S.No.	Column-A		Column-B
(a)	The parallelogram that is inscribed in a circle is a	(*i*)	square
(b)	The parallelogram having all of its sides equal is called a	(*ii*)	rectangle
(c)	The diagonals of a quadrilateral are unequal and bisect each other necessarily at right angles. It is a	(*iii*)	kite
(d)	The diagonals of a parallelogram are equal and bisect each other at right angles. It is a	(*iv*)	rhombus

Watch Video Solution

Assignment Iii Fill In The Blanks

1. The diagonals of rhombus bisect each other at . . . . . .

Watch Video Solution

2. All angles of a rectangle are equal and are . . . . . .

Watch Video Solution

3. All sides of a . . . . . Are equal and all angles are right angles.

Watch Video Solution

4. A rhombus is a quadrilateral with . . . . . Of equal length.

Watch Video Solution

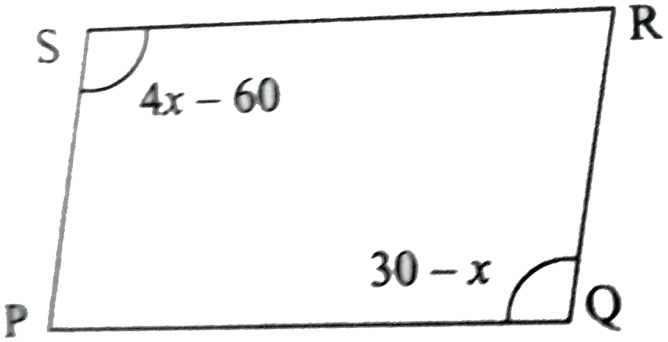
5. A square has sides of equal length and angles of equal measures, so it is a . . . . . polygon

Watch Video Solution

Assignment Iv Answer The Following Questions

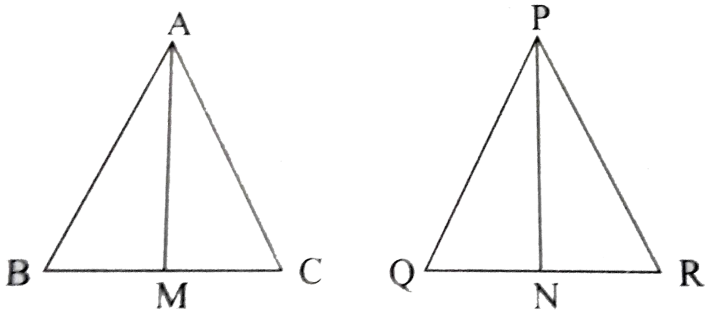
1. In the given diagram PQRS is a parellelogram.

$\angle S = 4x - 60 \angle Q = 30 - x$. Find the angles of P and R .



Watch Video Solution

2. In the given figure two sides AB and BC and median AM of one triangle ABC are respectively equal to side PQ and QR and median PN of ΔPQR. Show the $\Delta ABC \cong \Delta PQR$.



Watch Video Solution

3. ABCD is a rectangle in which diagonal AC bisects $\angle A$as well as $\angle C$. Show that:(i) ABCD is a square (ii) diagonal BD bisects $\angle B$as well as $\angle D$.

Watch Video Solution

4. In the figure "P" is a point in the interior of a parallelogram ABCD.

Show that area of $\Delta APD +$ area of ΔPBC = area of $\Delta APB +$ area of ΔPCD.

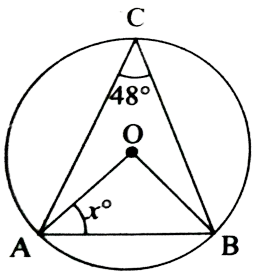
Watch Video Solution

5. A chord is at a distance of 8 cm from the centre of a circle of radius 17 cm. The length of the chord is

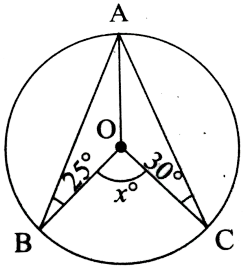
Watch Video Solution

6. Find the value of x in the following figures.

(a)



(b)



Watch Video Solution

7. Construct an equilateral triangle of sides 6 cm and locate its incentre. Also draw the incircle.

Watch Video Solution

8. Draw the incircle of ΔABC in which $AB = 6cm, AC = 7cm$ and $\angle A = 40^\circ$. Also find its

inradius.

Watch Video Solution

9. Construct the ΔABC such that $AB = 6$ cm, $BC = 5$ cm and $AC = 4$ cm and locate its centroid.

Watch Video Solution