MATHS

BOOKS - BEYOND PUBLICATION

TANGENTS AND SECANTS TO CIRCLE

Example

1. The tangent at any point of a circle is perpendicular to the radius through the point of contact.

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2. Use Pythagoras theorem and write proof of above theorem " the lengths of tangents drawn from an external point to a circle are equal . "

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3. Draw a circle with any radius . Draw four tangents at different points . How many tangents can you draw to this circle ?

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4. How many tangents you can draw to circle from a point away from it ?

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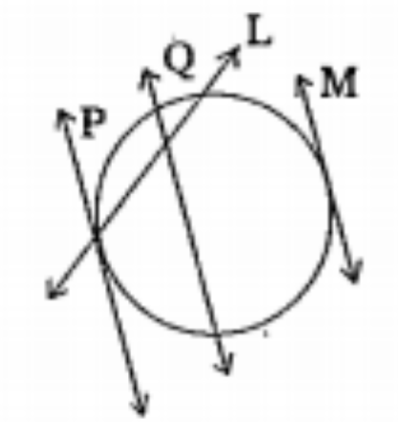
5. In the below figure which are tangents to the circles?



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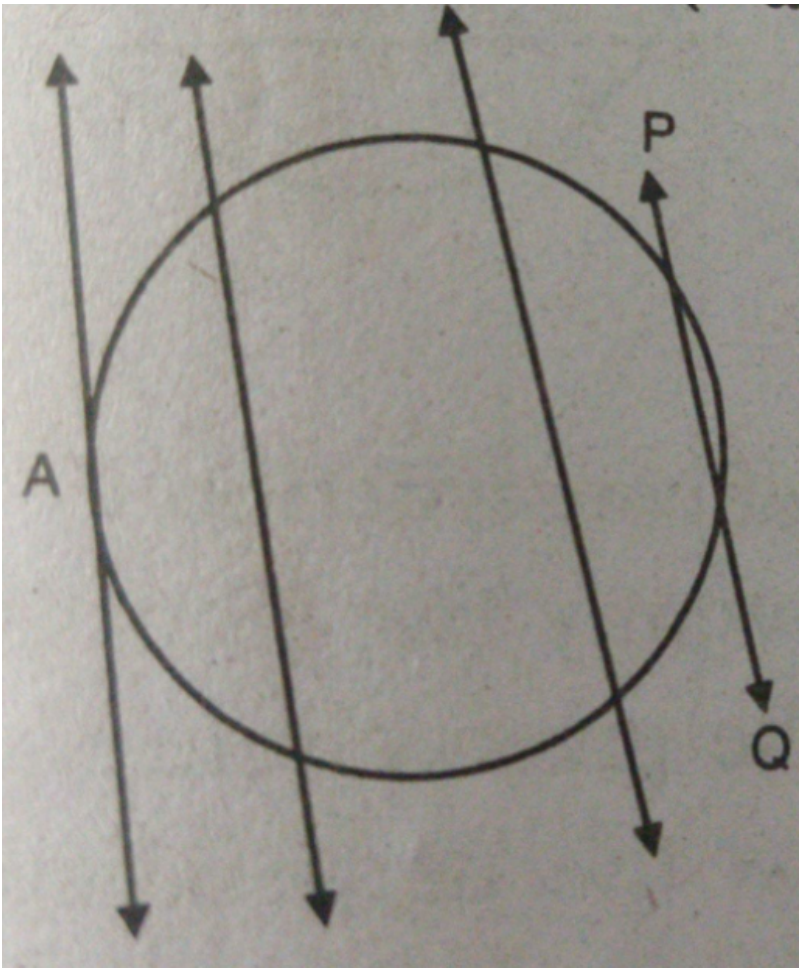
6. Draw a circle and a secant PQ of the circle on a paper as shown below. Draw various lines parallel to the secant on both sides of it . What happens to the length of chord

coming closer to the centre of the circle ?



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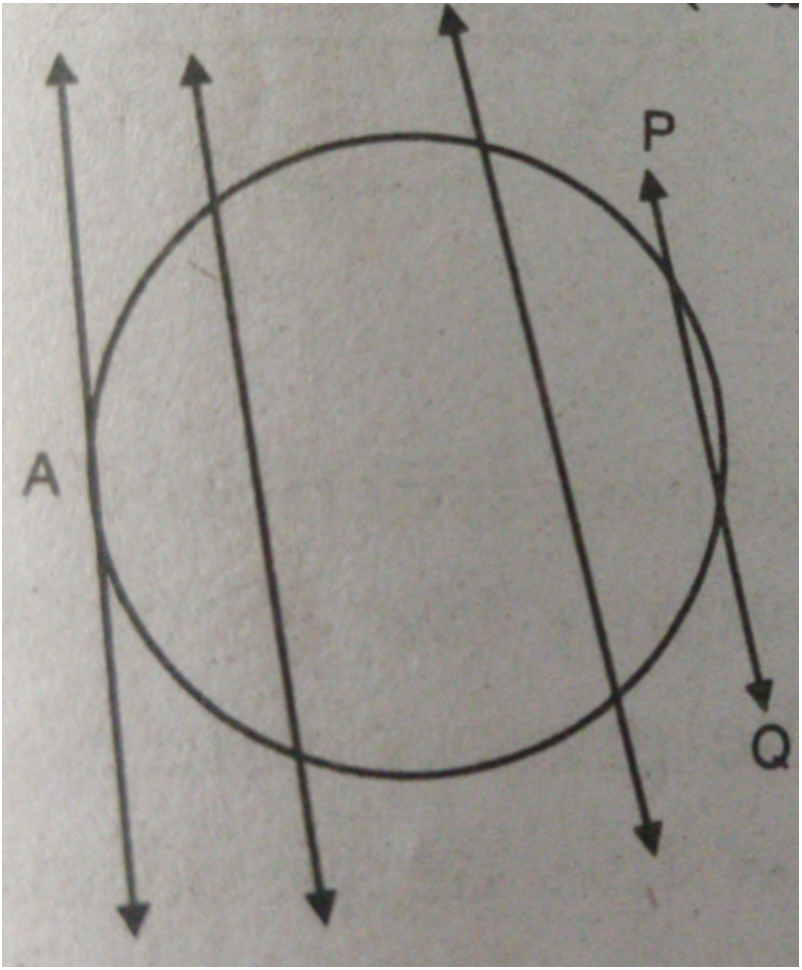
7. Draw a circle and a secant PQ of the circle on a paper as shown below. Draw various lines parallel to the secant on both sides of it . What happens to the length of chord coming closer to the centre of the circle ?



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8. How can you prove the converse of the above theorem.

"If a line in the plane of a circle is perpendicular to the radius at its end point on the circle , then the line is tangent to the circle " .

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9. How can you draw the tangent to a circle at a given point when the centre of the circle is not known?

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10. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q so that OQ = 12cm . Find length of PQ .

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11. Draw a circle and two lines parallel to a give such that one is a tangent and the other , a secant to the circle .

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12. Calculate the length of tangent from a point 15 cm away from the centre of a circle of radius 9 cm .

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13. Prove that the tangnets to a circle at the end points of a diameter are parallel .

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14. Draw a pair of tangents to circle of radius 5 cm which are inclined to each other at an angle 60° .

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15. Use Pythagoras theorem and write proof of above theorem " the lengths of tangents drawn from an external point to a circle are equal . "

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16. Draw a pair of radii OA and OB such that $\angle BOA = 120^\circ$. Draw the bisector of $\angle BOA$ and draw lines perpendiculars to OA and OB at A and B . These lines meet on the bisector of $\angle BOA$ at a point which is the external point and the perpendicular lines are the required tangents . Construct and justify .

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17. Choose the correct answer and give justification for each .

The angles between a tangent to a circle and the radius draw at the point of contact is

A. 60°

B. 30°

C. 45°

D. 90°

Answer:

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18. From a point Q , the length of the tangent to a circle is 24 cm . And the distacne Q from the centre is 25cm . The radius of the circle is

A. 7 cm

B. 12 cm

C. 15 cm

D. 24.5 cm

Answer:

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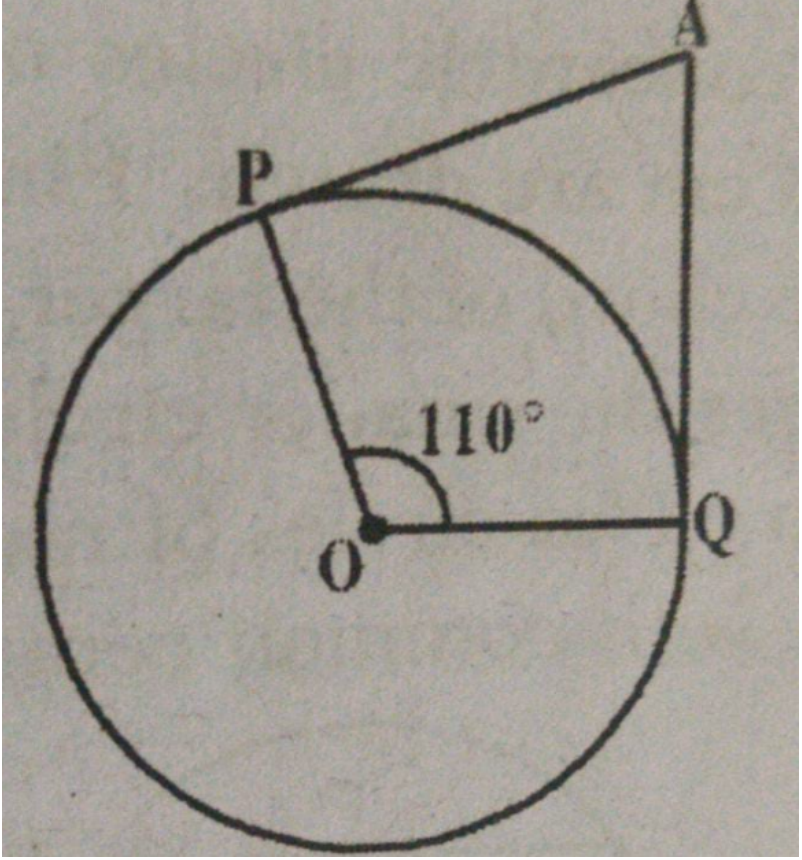
19. If AP and AQ are the two tangents a circle with centre O , so that $\angle POQ = 110^\circ$, $\text{Then} \angle PAQ$ is equal to



A. 60∞

B. 70∞

C. 80∞

D. 90∞

Answer:

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20. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at angle of 80° , then $\angle POA$ is equal to

A. 50°

B. 60°

C. 70°

D. 80°

Answer:

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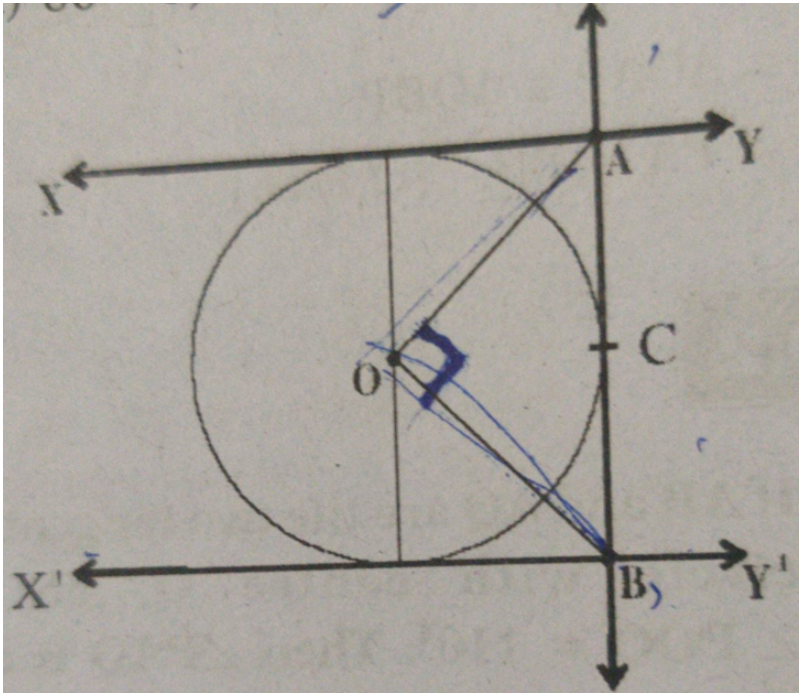
21. In the figure XY and X'Y' are two parallel tangents to a circle with centre O and another tangent AB with point of cantact C intersecting XY at A and X'Y' at B then `angle AOB=



A. 80°

B. 100°

C. 90°

D. 60°

Answer:

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22. Two concentric circles of radii 5 cm and 3 cm are draw . Find the length of the chord of the larger circle which touches the smaller circle .

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23. Parallelogram circumscribing a circle is a .....

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24. A triangle ABC is drawn to circumscribe a circle of radius 3 cm. such that the segments BD and DC into which BC is divided by the point of contact D are of length 9 cm. and 3 cm. respectivley. Find the sides AB and AC.

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25. Draw a circle of radius 6 cm. From a point 10 cm away from its centre, construct the pair of tangents to the circle and measure their lengths.

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26. Construct a tangent to a circle of radius 4 cm from a point on the concentric circle of radius 6 cm and measure its length. Also verify the measurement by actual calculation.

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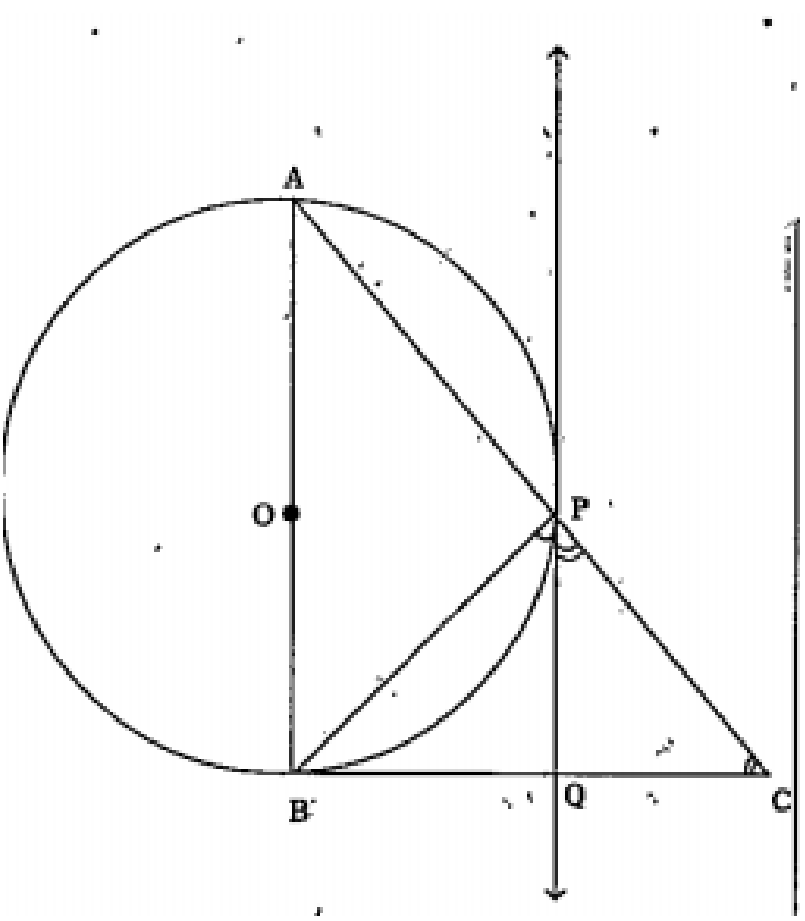
27. In a right triangle ABC, a circle with a side AB diameter is drawn to intersect the hypotenuse AC in P. Prove that the

tangent to the circle at P bisects the side BC.



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28. Draw a tangent to a given circle with center O from a point 'R' outside the circle. How many tangents can be

drawn to the circle from that point?

The distance of two points to the point of contact is the same.

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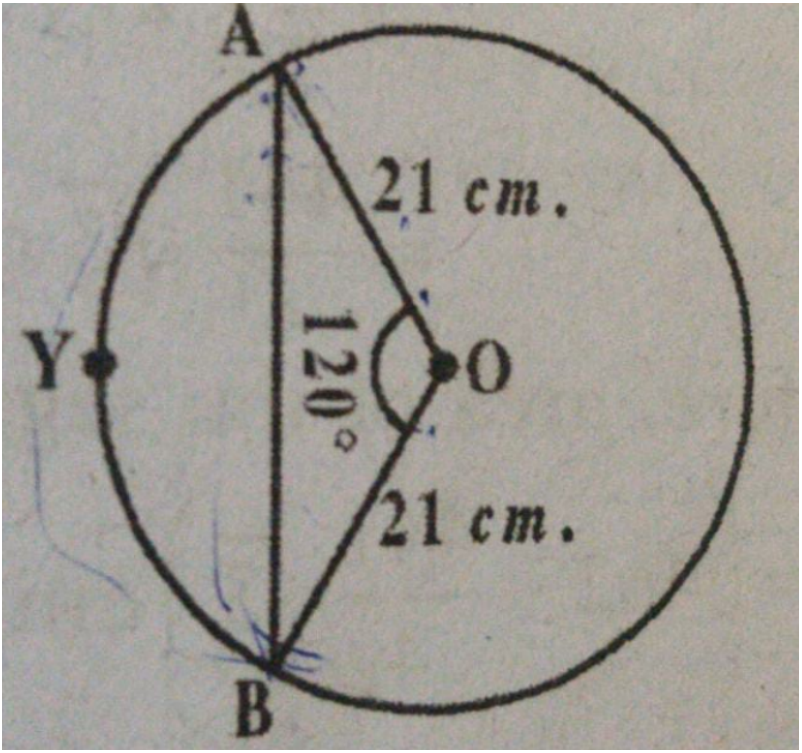
29. Find the area of the segment AYB showing in the adjacent figure . If radius of the circle is 21 cm and $\angle AOB = 120^\circ$.

(Use $\pi \frac{22}{7}$ and $\sqrt{3} = 1.732$)



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30. Find the area of the shaded in figure , if PQ = 24cm , PR = 7cm . And QR is the diameter of the circle with centre O .

$\left(\text{Take } \pi = \frac{22}{7}\right)$

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31. A round table top has six equal diesigns as shown in the radius of the table top is 14 cm , find the cost of making the designs with point at the rate Rs 5 per cm^2 . (Use $\sqrt{3}=1.732$)

Watch Video Solution

32. Find the area of sector , whose radius is 7 cm . With the given angles .

60°

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33. Find the area of sector , whose radius is 7 cm . With the given angles .

30°

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34. Find the area of sector , whose radius is 7 cm . With the given angles .

72°

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35. Find the area of sector , whose radius is 7 cm . With the given angles .

90°

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36. Find the area of sector , whose radius is 7 cm . With the given angles .

120°

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37. The length of the minute hand of a clock is 14 cm . Find the area swept by the minute hand in 10 minutes .

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38. How can you find the area of major segment using area of minor segment ?

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39. A chord of circle of radius 10 cm subtends a right angle at the centre . Find the area of the corresponding :

Minor segment

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40. A chord of circle of radius 10 cm subtends a right angle at the centre . Find the area of the corresponding :

Major segment

Watch Video Solution

41. A chord of a circle of radius 12 cm subtends an angle of 120° at the centre . Find the area of the area of the corresponding minor segment of the circle .

(Use $\pi = 3.14$ and $\sqrt{3} = 1.732$)

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42. A car has two wipers which do not overlap. Each wiper has a blade of length 25 cm sweeping through an angle of 115° . Find the total area cleaned at the sweep of the blades . (use $\pi = \frac{22}{7}$)

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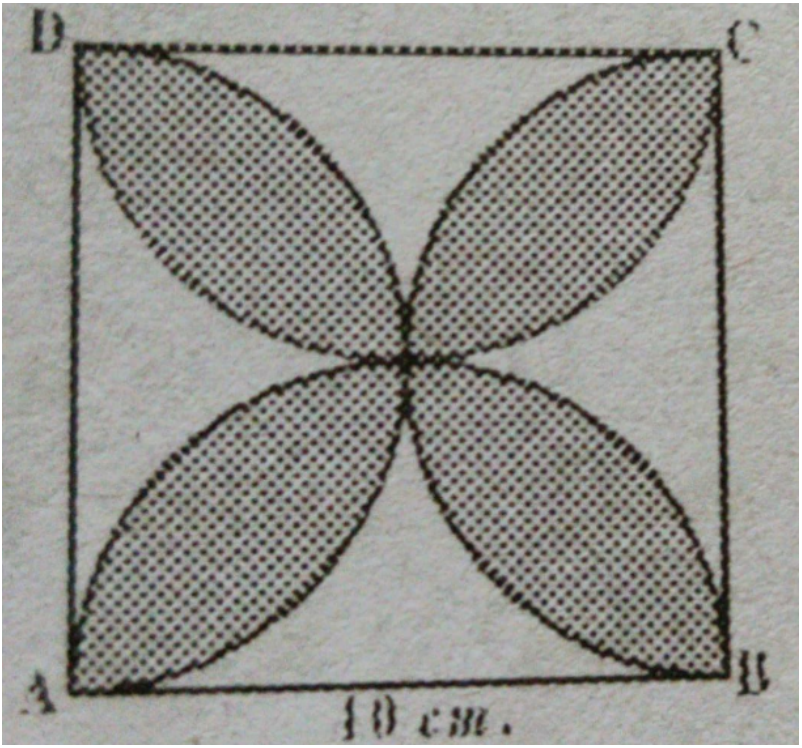
43. Find the area of the shaded region in figure , where ABCD is a square of side 10 cm .and semicircles are draw with each side of the square as diameter (use $\pi = 3.14$).



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44. Find the are of the shaded region in figure , if ABCD is a square of side 7 cm and APD and BPC are semicircles . (use $\pi = \frac{22}{7}$)

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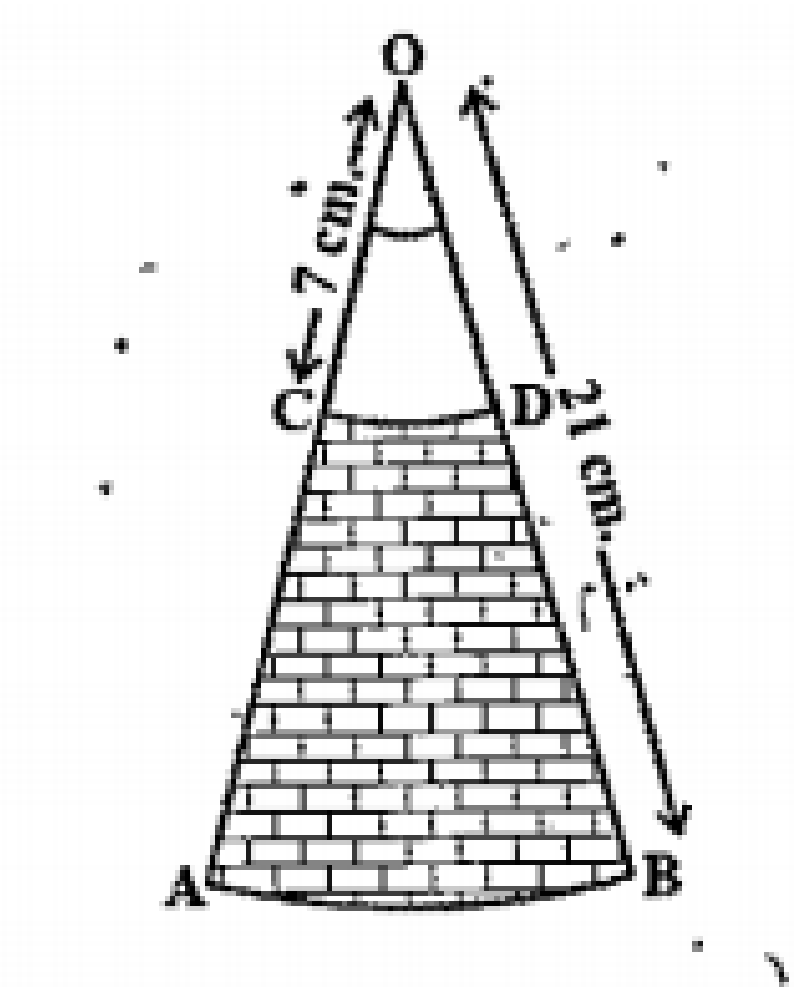
45. In figure OACB is a quadrant of a circle with centre O and radius 3.5 cm . If OD = 2 cm ., find the area of the shaded region . (use $\pi = \frac{22}{7}$)

Watch Video Solution

46. A B and CD are respectively arcs of two concentric circles of radii 21 CM and 7cm which center O(see figure).If

$\angle = 30^\circ$ find the area of the shaded region. (use$\pi = \frac{22}{7}$)



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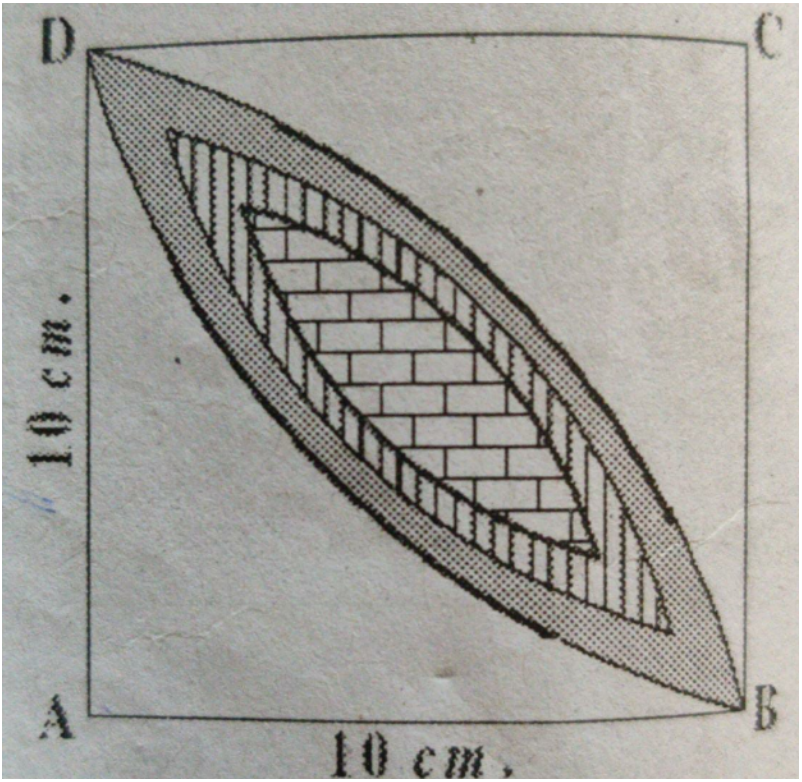
47. Calculate the area of the desigred region in figure , common between the two quadrants of the circles of radius 10 cm each . (use $\pi = 3.14$)



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48. Prove that the angle between the two tangents drawn from an external point to a circle is supplementary to the angle subtended by the line segment joining the points of contact at the centre.

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49. PQ is a chord of length 8 cm of a circle of radius 5 cm. The tangents at P and Q intersect at a point T (see figure). Find the length of TP.

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50. Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle .

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51. Draw a line segment AB of length 8 cm . Taking A as centre draw a circle of radius 4 cm and taking B as centre , draw another circle of radius 3cm . Construct tangents to each circle from the centre of the other circle.

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52. Let ABC be a right traingle in which AB = 6 cm , BC = 8 cm and $\angle B = 90^\circ$ BD is the perpendicular from from B on AC . The circle through B , C , D is draw . Contruct the tangents from A to this circle .

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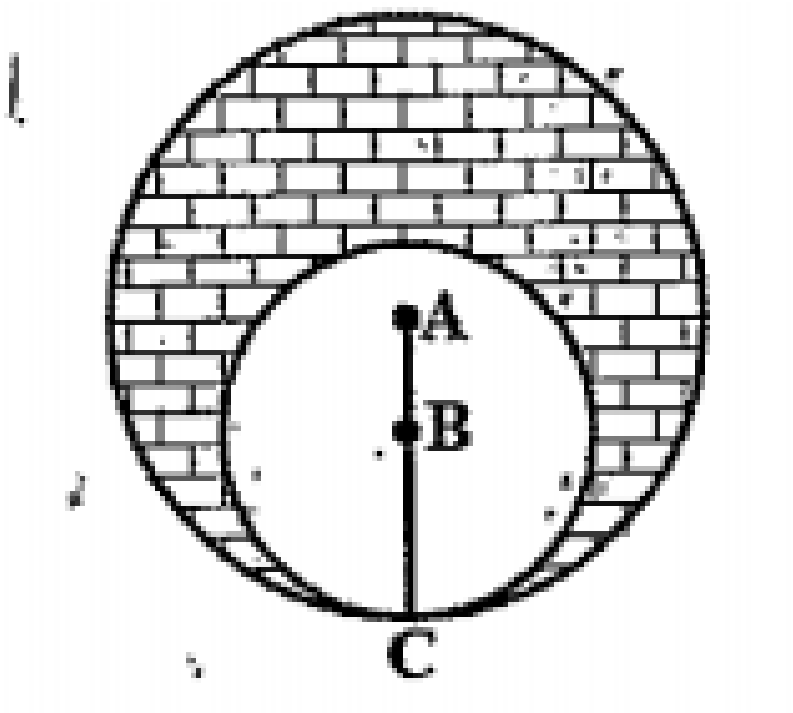
53. find the area of the shaded region in figure, given in which two circles with centers A and B touch each other at

the point C. If AC= 8cm and AB=3cm.



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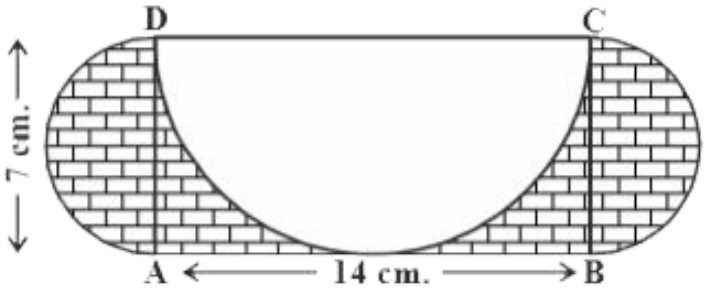

54.

ABCD is a rectangle with $AB = 14cm$ and $BC = 7cm$. Taking DC, BC and AD as diameters, three semicircles are drawn as shown in the figure. Find the area of shaded region.

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55. Find the length of the tangent from a point 13 cm away from the centre of the circle of radius 5 cm.

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56. Two concentric circles of radii 25 cm and 24 cm are drawn. Find the length of the chord of the larger circle which touches the smaller circle.

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57. Find the area of a quadrant of a circle whose circuemference is 88 cm.

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58. Two circles touch internally. The sum of their areas is $125\pi cm^2$ and distance between their centres is 5 cm. Find

the radii of the circles.

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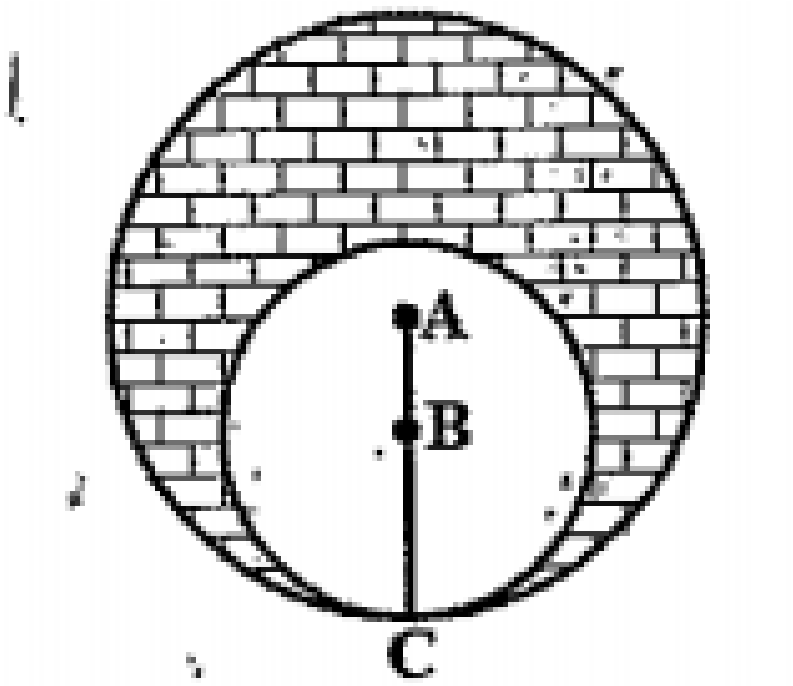
59. find the area of the shaded region in figure, given in which two circles with centers A and B touch each other at the point C. If AC= 8cm and AB=3cm.



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60. O' is any point inside a rectangle ABCD.

Prove that $OB^2 + OD^2 = OA^2 + OC^2$

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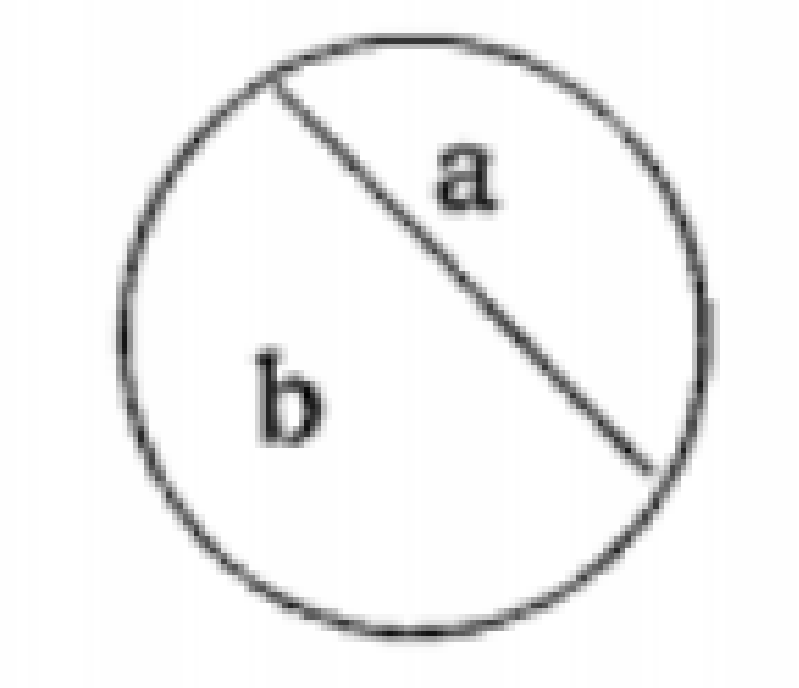
61. What do we call the part a and b in the below circle?



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62. How many tangents can be draw to a circle from a point on the same circle . Why ?

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63. Draw a circle wih radius 3 cm and construct a pair of tangents from a point 8 cm away from the centre .

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64. Construct and measuare the length of a pair of tangents that are drawn from a point at a distance of 8 cm

whose radius is 5 cm.

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65. The length of the minute hand of a clock is 8 cm find the area swept by the minute hand in 5 minutes.

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66. The length of the minute hand of a clock is 15 cm find the area swept by the minute hand in 5 minutes.

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67. Find the area of the segments shaded in figure, if PQ = 28 cm, PR = 8 cm and QR is the diameter of the circle with centre O.

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68. Find the area of the segments shaded in figure. If PQ = 16, PR = 3cm and QR is the diameter of the circle with center O.

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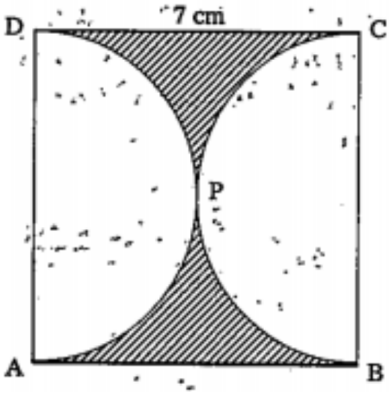
69. Find the area of the shaded region in the figure. If ABCD is a square of side 7 cm and APD and BPC are semi-circles.



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70. Find the area of the shaded region in the figure. If ABCD is a square of side 8 cm and APD and BPC are semi-circles.

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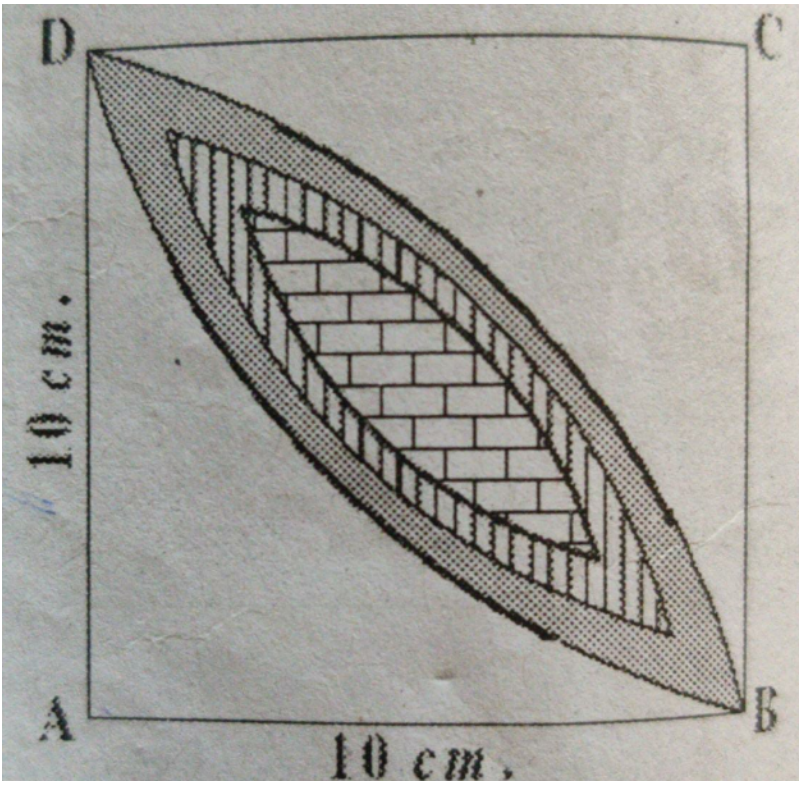
71. Calculate the area of the desigred region in figure , common between the two quadrants of the circles of

radius 10 cm each . (use $\pi = 3.14$)



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72. Calculate the area of the designed region in figure, common between the two quadrants of the circles of radius 16 cm.

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73. A chord of a circle of radius 20 cm subtends a right angle at the centre find the corresponding minor segment.

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74. A chord of a circle of radius 15 cm subtends a right angle at the centre find the corresponding major segment.

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75. The circumference of a circle is 100 cm . The side of a square inscribed in the circle is ..... Cm .

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76. If radius of circle $\frac{7}{2}cm$ then find perimeter of quadrant.

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77. $x^\circ = 60^\circ$, $r = 14$ cm then area of sector = ... cm^2

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78. The area of square is 49 cm^2 then side is ..... Cm .

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79. Let ABC be a right traingle in which AB = 6 cm , BC = 8 cm and $\angle B = 90^\circ$ BD is the perpendicular from from B on AC . The circle through B , C , D is draw . Contruct the tangents from A to this circle .

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80. Draw a line segment AB of length 10 cm. Taking A as centre, draw a circle of radius 6 cm and taking B as centre, draw another circle of radius 3 cm.Construct tangents to each circle from the centre of other circle.

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81. ABCD is rectangle with AB = 10 cm and BC = 4 cm take DC, BC and AD as diameters as shown in the figure. Find the area of the shaded region.

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82. If raddi pf two concentric circle are 6 cm and 10 cm , then lngth of chord of the larger circle wchich is tangent to other is .....cm

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83. Two circles of radii 7 cm and 4 cm touch each other externally. Then the distance between their centres.

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84. Two circles of radii 5 cm and 3 cm touch each other internally. Then the distance between their centres.

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85. Area of the sector of a circle with radius 21 cm and angle 30°.

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86. A circle touches all the your sides of a quadrilateral PQRS. Prove that

PQ + RS = QR + SP.

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Exercise

1. A tangent to a circle intersects it in ..... Point (s) .

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2. A line intersecting a circle in two points is called a .....

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3. Fill in the blanks. A circle can have parallel.....tangents at the most.

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4. The common point to a tangent and a circle is called .....

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5. We can draw ..... tangents to a given circle .

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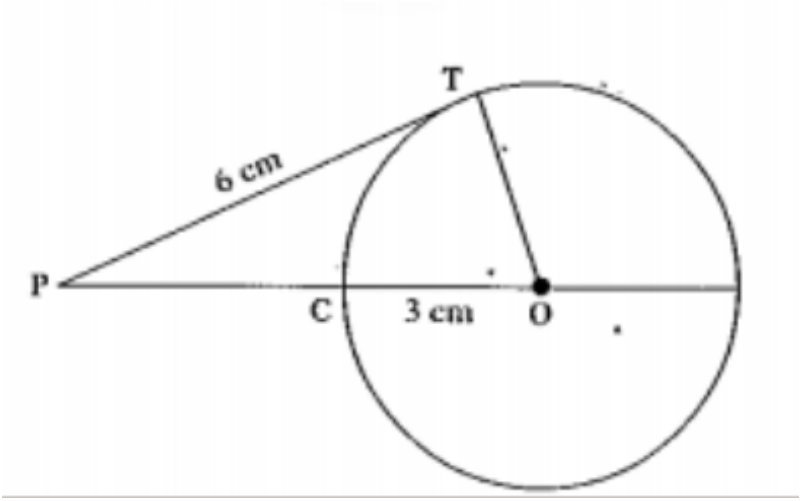
6. In the given figure, O is the centre of the circle and PT is a tangent at T.

If PC = 3 cm and PT = 6 cm, calculate the radius of the circle.



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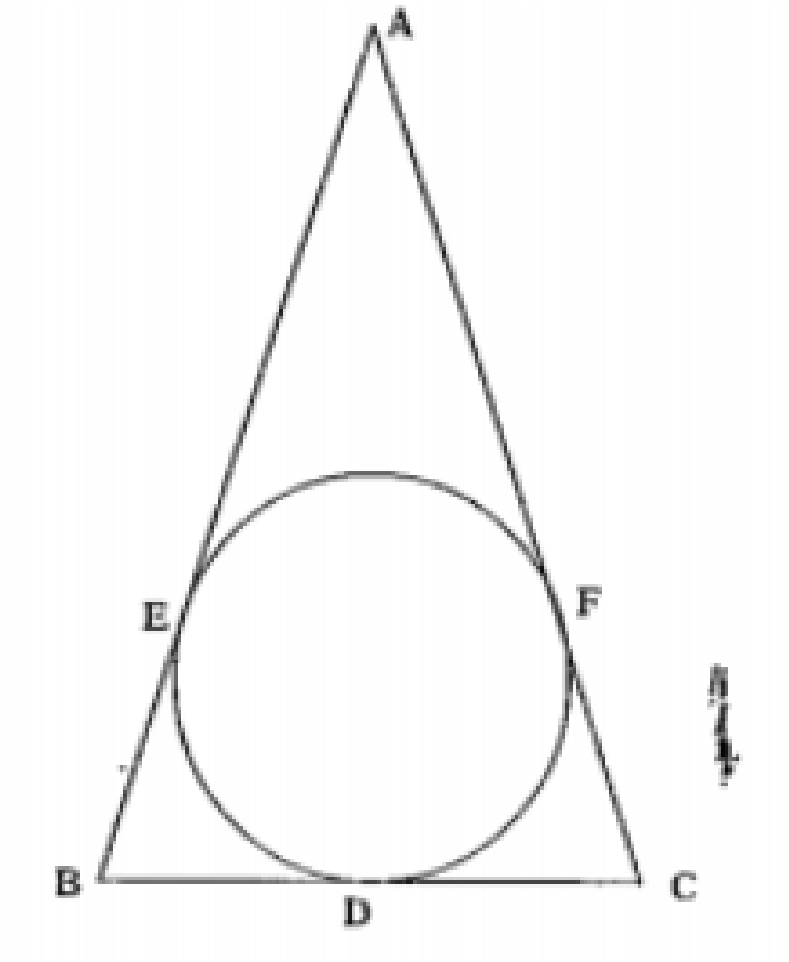
7. In the adjacent figure, Prove that BD = DC if AB = AC



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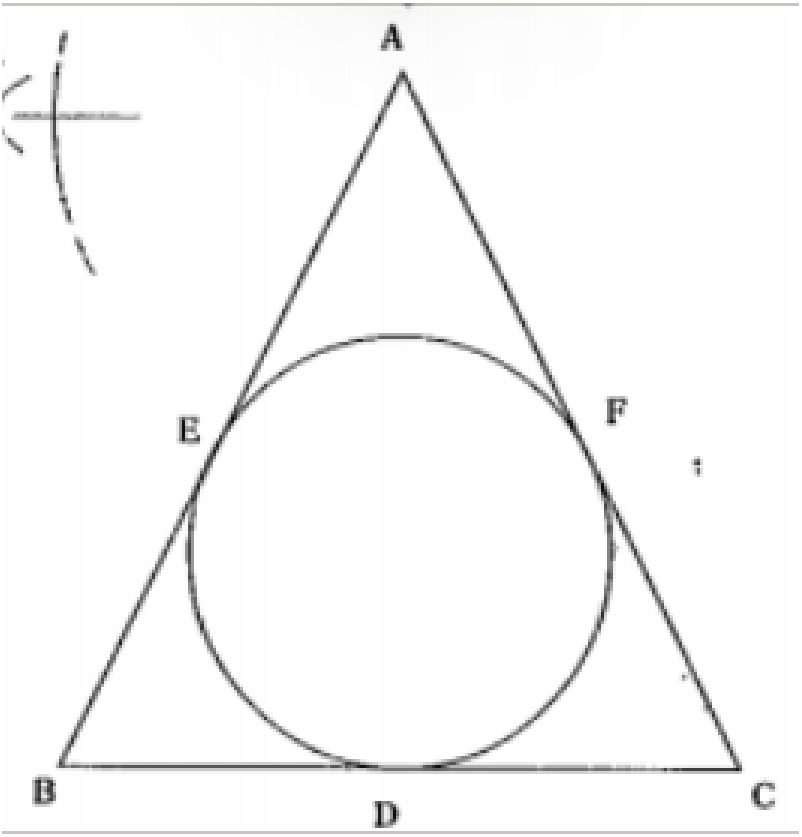
8. The incircle of a $\triangle ABC$ touches the sides AB, BC and CA at the points F, D and E resepectively. Prove that $AF + BD + CE + DC + EA = \frac{1}{2}(Perimeter of \triangle ABC)$



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9. Find the area of a quadrant of a circle whose circuemference is 88 cm.

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10. The minute hand of a clock is 6 m long. Find the area of the face of the clock described by the minute hand in 35 minutes.

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11. Two circles touch internally. The sum of their areas is $116\pi cm^2$ and distance between their centres is 6 cm. Find the radii of the circles.

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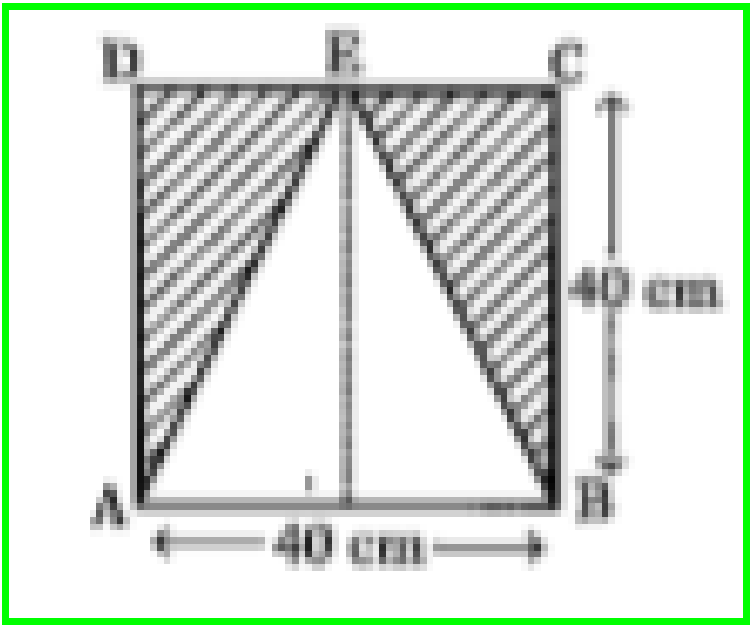
12. In the figure ABCD, find the area of the shaded region.



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13. A chord of a circle of radius 14 cm subtends a right angle at the centre. Find the areas of the minor and major segments of the circle.

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14. A circle touches all the four sides of a quadrilateral PQRS . Prove that

PQ + RS = QR + SP

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15. Prove that the tangents at the extermities of any chord makes equal angles with the chord.

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16. Two tangents TP and TQ are drawn to a circle with centre 'O' from on external point T. Prove that $\angle PTQ = 2\angle OPQ.$

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17. In two concentric circles, a chord of length 24 cm of larger circle becomes a tangent to the smaller circle whose radius is 5 cm. Find the radius of the larger circle.

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18. If 'O' is the centre of the circle. PA and PB are tangent segments. Show that the quadrilateral AOBP is cyclic.

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19. If PA and PB are tangents from an external point to a circle with centre O. LN touches the circle at M. Prove that $PL + LM = PN + MN$

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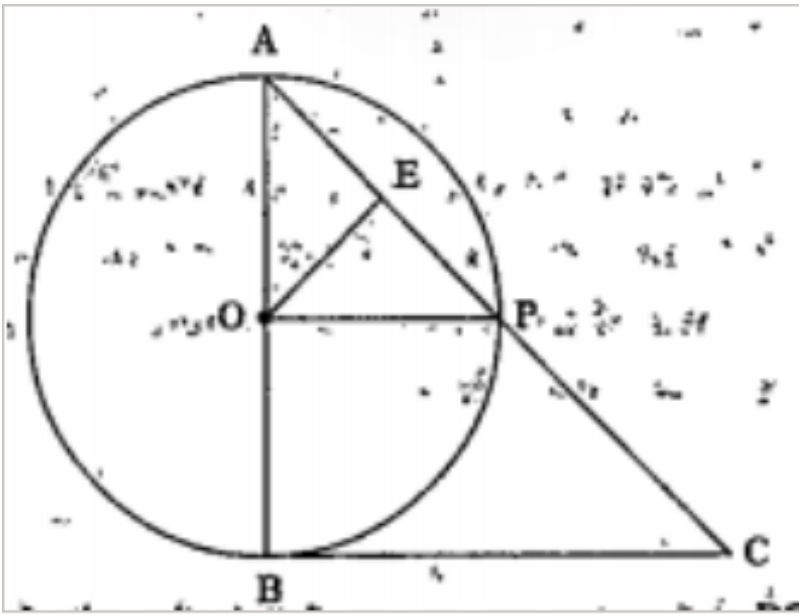
20. In the adjacent figure, BC is a tangent to the circle with centre 'O'. OE bisects AP.

prove that $\triangle AEO \sim \triangle ABC$.



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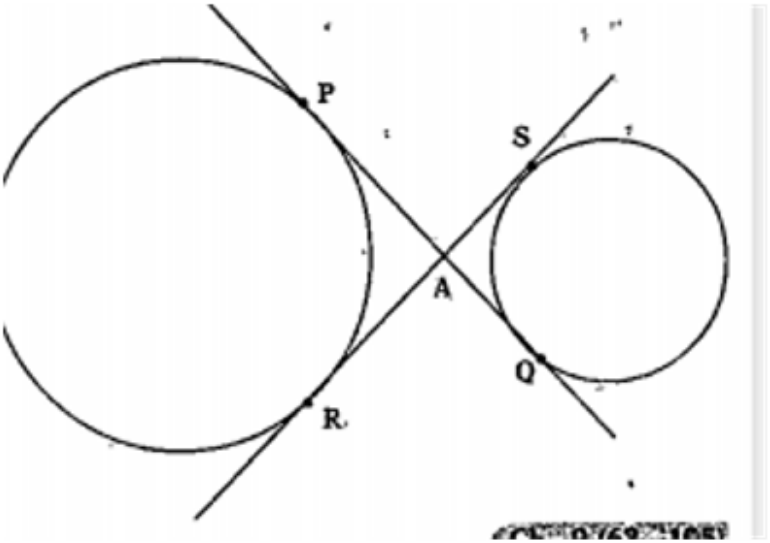
21. In the adjacent figure, common tangents PQ and RS to two circles intersect at A. Prove that PQ = RS.



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22. Choose the correct answer and give justification for each .

The angles between a tangent to a circle and the radius draw at the point of contact is

A. 90°

B. 60°

C. 45°

D. 30°

Answer:

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23. From a point P, the length of the tangent to a circle is 12 cm, and the distance of P from the centre is 13 cm. The radius of the circle is

A. 7 cm

B. 6 cm

C. 5 cm

D. 12.5 cm

Answer:

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24. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at angle of 80° , then $\angle POA$ is equal to

A. 50°

B. 60°

C. 70°

D. 80°

Answer:

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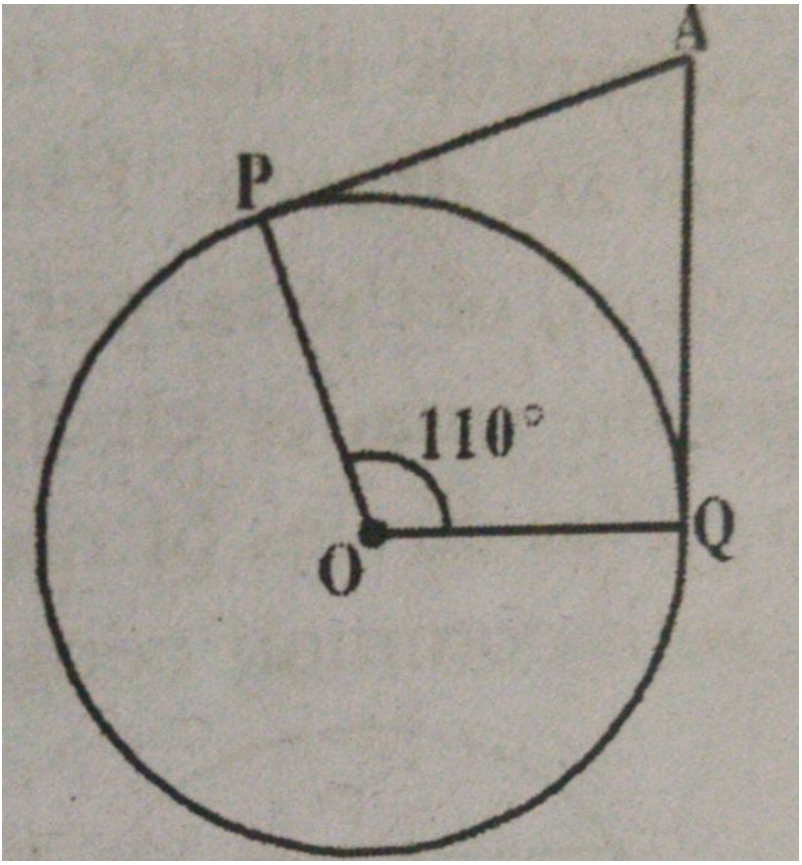
25. If AP and AQ are the two tangents a circle with centre O , so that $\angle POQ = 110^\circ$, $\text{Then} \angle PAQ$ is equal to



A. 60°

B. 70°

C. 80°

D. 90°

Answer:

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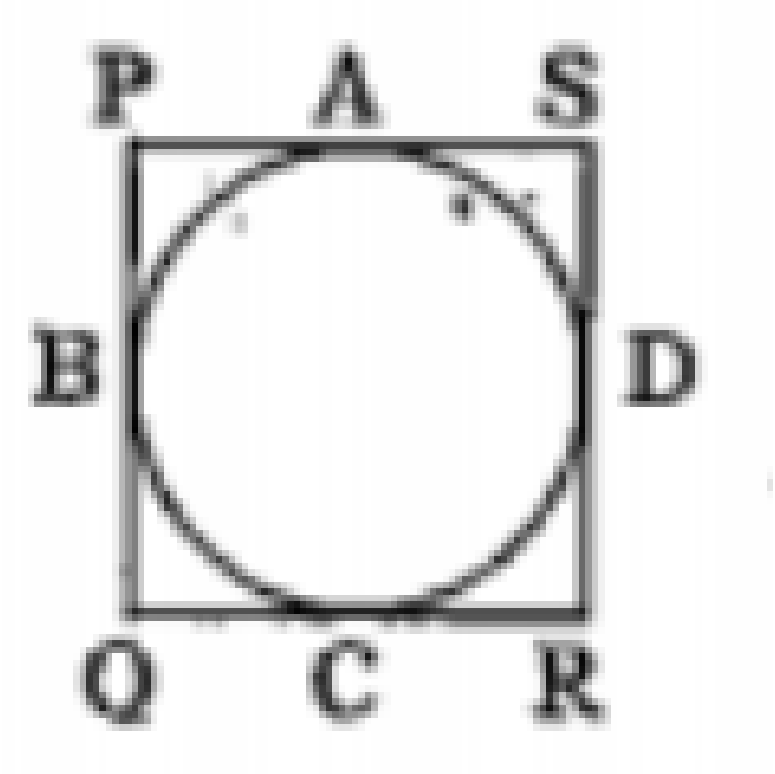
26. In the adjacent figure, if quadrilateral PQRS circumstances a circle then PB + SD =



A. SR

B. PR

C. QS

D. PS

Answer:

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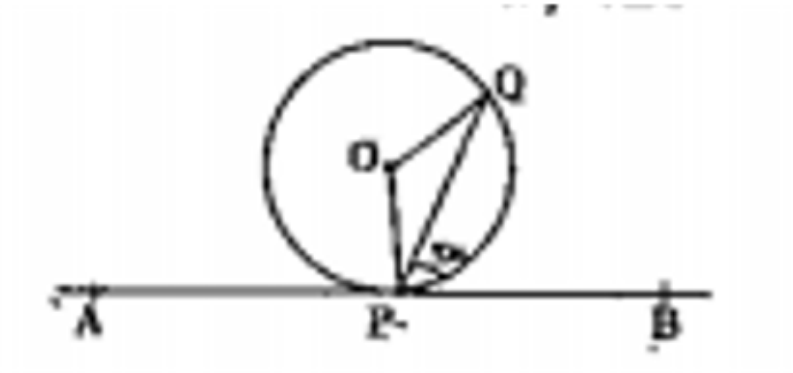
27. In the adjacent figure APB is a tangent to the circle with centre 'O' at a point P. If $\angle QPB = 50^\circ$ then the measure of $\angle POQ$



A. 25°

B. 75°

C. 100°

D. 120°

Answer:

Watch Video Solution

28. The length of the tangent drawn from a point 17 cm away from the centre of a circle of radius 8 cm is

A. 25 cm

B. 9 cm

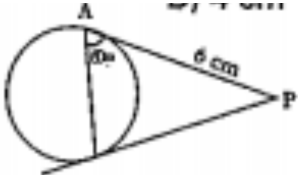
C. 15 cm

D. 8.5 cm

Answer:

Watch Video Solution

29. In the adjacent figure, the length of the chord AB if PA = 6 cm and $\angle PAB = 60^\circ$ is



A. 5 cm

B. 6 cm

C. 7 cm

D. 4 cm

Answer:

Watch Video Solution

30. A line intersecting a circle in two points is called a .....

A. a secant

B. a tangent

C. a chord

D. an arc

Answer:

Watch Video Solution

31. The number of tangents that can be drawn to a circle at any point on it is

A. 2

B. 1

C. 3

D. infinetly many

Answer:

Watch Video Solution

32. The number of parallel tangents that can be drawn to a circle can have at the most is

A. 1

B. 2

C. 3

D. 4

Answer:

Watch Video Solution

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

A. 2

B. 1

C. infinetly many

D. 4

Answer:

Watch Video Solution

34. Two concentric circles of radii 5 cm and 3 cm are draw . Find the length of the chord of the larger circle which touches the smaller circle .

A. 10 cm

B. 6 cm

C. 8 cm

D. 2 cm

Answer:

Watch Video Solution

35. Length of the arc of a quadrant of a circle of radius 'r' is

A. πr

B. $3\pi r$

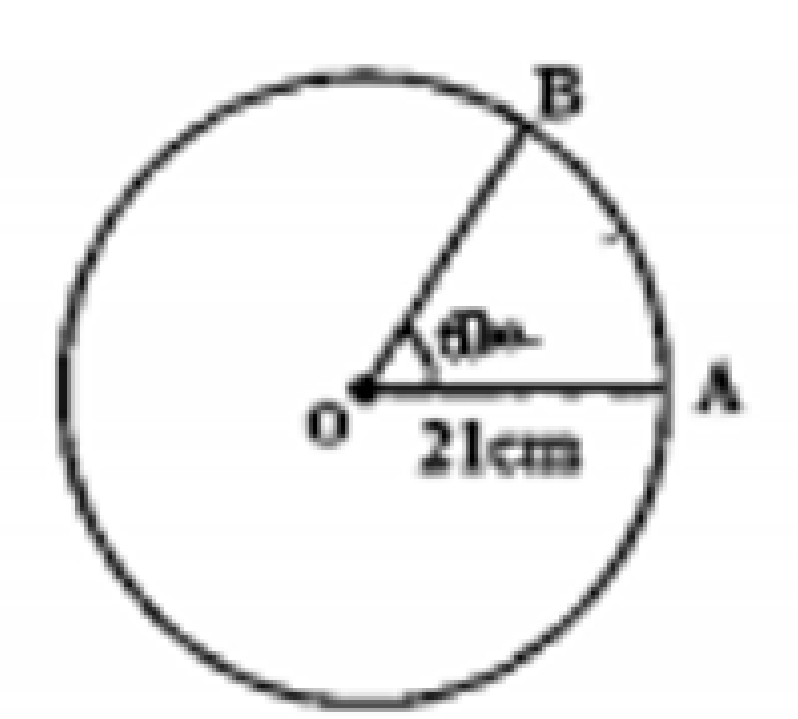
C. $\frac{\pi r}{2} + 2r$

D. $\frac{\pi r}{2}$

Answer:

Watch Video Solution

36. The length of the arc $A \times B$ in the adjacent figure is



A. 11 cm

B. 22 cm

C. 33 cm

D. 44 cm

Answer:

Watch Video Solution

37. The area of a sector of a circle of radius 7 cm and central angle 45° is

A. $5.5cm^2$

B. $19.25cm^2$

C. $154cm^2$

D. $77cm^2$

Answer:

Watch Video Solution

38. In the adjacent figure, 'O' is the centre of the circle. The area of the sector OAPB is 5/18 part of the area of the circle. Then the value of 'x' is

A. 30°

B. 60°

C. 45°

D. 100°

Answer:

Watch Video Solution

39. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q so that OQ = 12cm . Find length of PQ .

A. $\sqrt{79}$

B. $\sqrt{119}$

C. 119

D. 169

Answer:

Watch Video Solution

40. The number of parallel tangents to a circle with a given tangent is .....

A. 1

B. 2

C. 3

D. 4

Answer:

Watch Video Solution

41. The length of the tangnet draw from an ecterior point is 8 cm away from the centre of a circle of radius 6 cm is .....

A. 8 cm

B. 10 cm

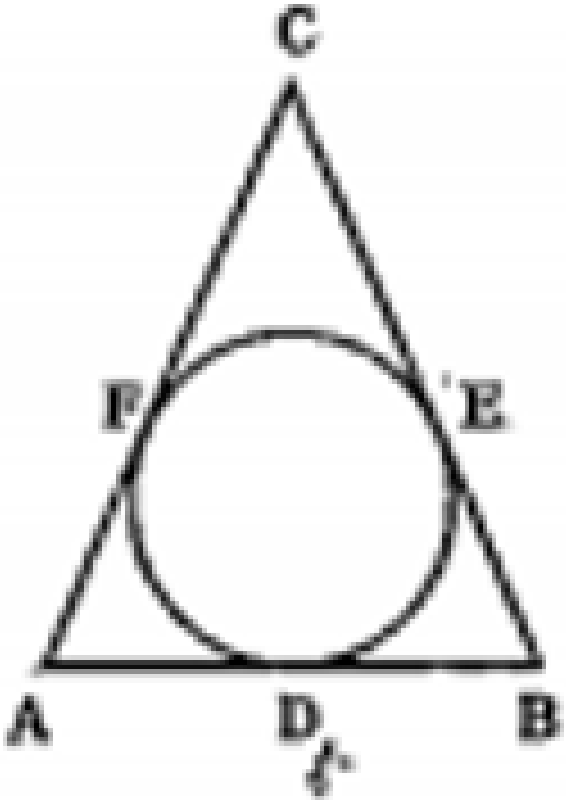
C. 6 cm

D. 12 cm

Answer:

Watch Video Solution

42. The semi perimeter of $\triangle ABC$ = 28 cm then AF + BD + EC is __



A. 23 cm

B. 28 cm

C. 56 cm

D. 14 cm

Answer:

Watch Video Solution

43. The length of the tangnet draw from an ecterior point is 8 cm away from the centre of a circle of radius 6 cm is .....

A. $2\sqrt{7}cm$

B. $3\sqrt{7}cm$

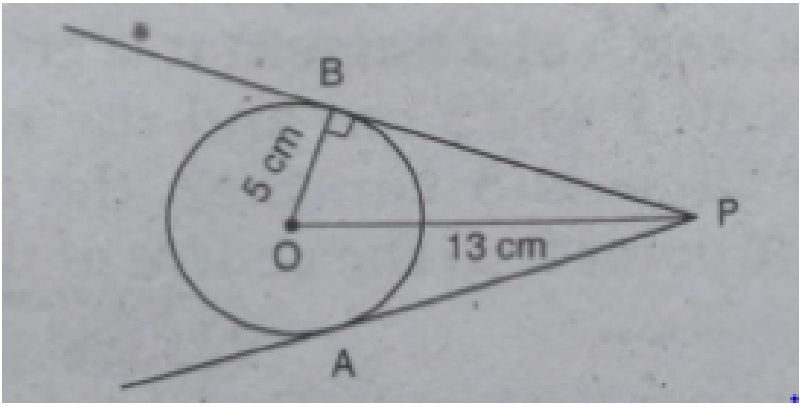
C. $\sqrt{7}cm$

D. 10 cm

Answer:

Watch Video Solution

44. In the figure 'O' is the centre of the circle and PA, PB are tangents , then their lenths are .....



A. 5 cm, 13 cm

B. 13 cm, 13 cm

C. 13 cm, 12 cm

D. 12 cm, 12 cm

Answer:

Watch Video Solution

45. Angle in a major segment is .....

A. an obtuse angle

B. an acute angle

C. right angle

D. none

Answer:

Watch Video Solution

46. The length of the tangent drawn to a circle with radius 'r' from a point P which is 'd' units from the centre is .....

A. $\sqrt{a^2 - r^2}$

B. $\sqrt{r^2 - d^2}$

C. $\sqrt{dr}$

D. $\sqrt{d + r}$

Answer:

Watch Video Solution

47. If the arc is a minor arc then the segment is a ..... segment

A. Minor

B. Major

C. Semi-circle

D. none

Answer:

Watch Video Solution

48. The radius of a circle is equal to the sum of the circumfernces of two circles of diameters 36 cm and 20 cm is ..... cm .

A. 16 cm

B. 28 cm

C. 42 cm

D. 56 cm

Answer:

Watch Video Solution

49. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at angle of 110° , then $\angle POA$ is equal to

A. 45°

B. 50°

C. 70°

D. 35°

Answer:

Watch Video Solution

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

A. 1

B. 4

C. 2

D. none

Answer:

Watch Video Solution

51. In the given figure, $\angle APB = 60^\circ$ and OP = 10 cm. then PA = ...cm.

A. 5

B. $5\sqrt{2}$

C. $5\sqrt{3}$

D. 20

Answer:

Watch Video Solution

52. The maximum nuber of possible tangents that can be draw to a circle is .....

A. infinity

B. 2

C. 4

D. 1

Answer:

Watch Video Solution

53. Angle between the tangent and radius drawn through the point of contact is .....

A. 60°

B. 30°

C. 45°

D. 90°

Answer:

Watch Video Solution

54. If a circle is inscribed in a Quadrilateral then AB +CD= .....

A. BC + DA

B. AC + BD

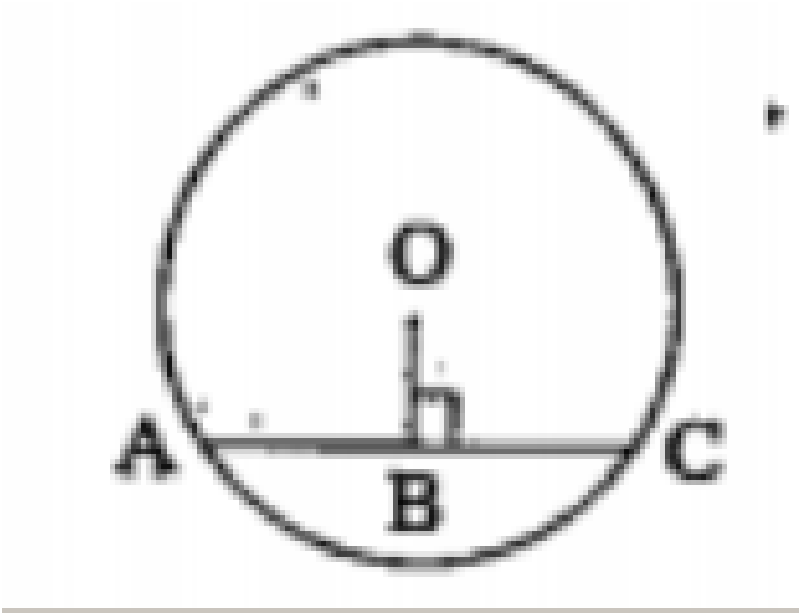
C. 2AC + 2BD

D. 2BC + 2DA

Answer:

Watch Video Solution

55. In the adjoint figure AC = 5 , so BC = ...cm



A. 5 cm

B. 7.5 cm

C. 2.5 cm

D. 10 cm

Answer:

Watch Video Solution

56. The angle made at the centre of a circle is .....

A. 360°

B. 90°

C. 280°

D. 60°

Answer:

Watch Video Solution

57. The number of secant that can be drawn to a circle is .....

A. 2

B. 1

C. infinity

D. 0

Answer:

Watch Video Solution

58. The diameter of a circle is 10.2 cm then its radius is ..... Cm .

A. 5.1 cm

B. 20.4 cm

C. 10.5 cm

D. 15.3 cm

Answer:

Watch Video Solution

59. If 'r' is the radius of a semi-circle then its perimeter is .....

A. $\pi r + 2r(\text{ or }) r[\pi + 2](\text{ or }) \frac{36}{7} r$

B. $\pi r + r$

C. $\pi r + 3r$

D. πr

Answer:

Watch Video Solution

60. Which of the following is correct ?

(i) Maximum possible tangents that can be draw to a circle from a point 'P' is 2 .

(ii) The number of secants draw to a circle from a point at ecterior is 2

A. (i) only

B. (ii) only

C. (i) and (ii)

D. neither (i) or (ii)

Answer:

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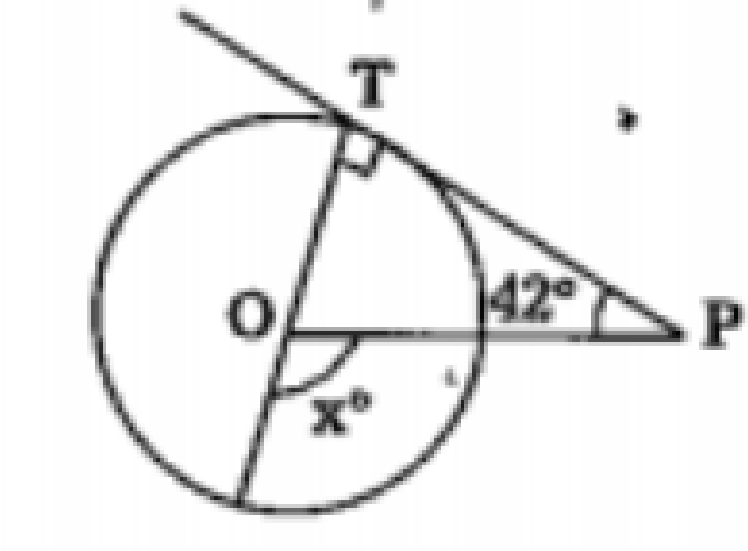
61. In the figure PT is a tangent to the circle with centre 'O'

then x =



A. 148°

B. 58°

C. 52°

D. 42°

Answer:

Watch Video Solution

62. Angle in a major segment is .....

A. an obtuse angle

B. an acute angle

C. right angle

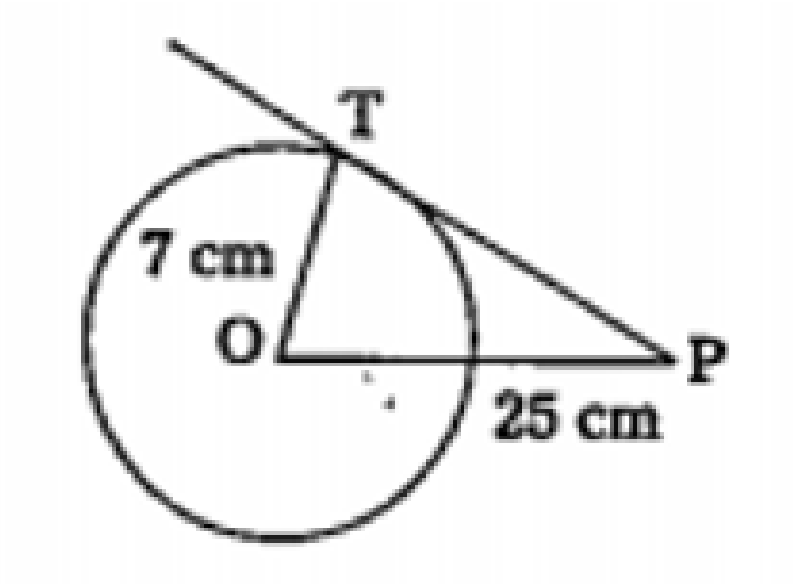
D. none

Answer:

Watch Video Solution

63. In the figure PT is tangent drawn from P. If the radius is 7 cm and OP is 25 cm, then the length of the tangent is

.....cm.



A. 18

B. 20

C. 24

D. 26

Answer:

Watch Video Solution

64. PQ is the chord of a circle . The tangent XR drawn at X meets PQ at R when produced . If XR = 12 cm , PQ = x cm , OR = (x-2) cm , the x = ...

A. 6 cm

B. 7 cm

C. 14 cm

D. 10 cm

Answer:

Watch Video Solution

65. Choose the correct answer and give justification for each .

The angles between a tangent to a circle and the radius draw at the point of contact is

A. 90°

B. 60°

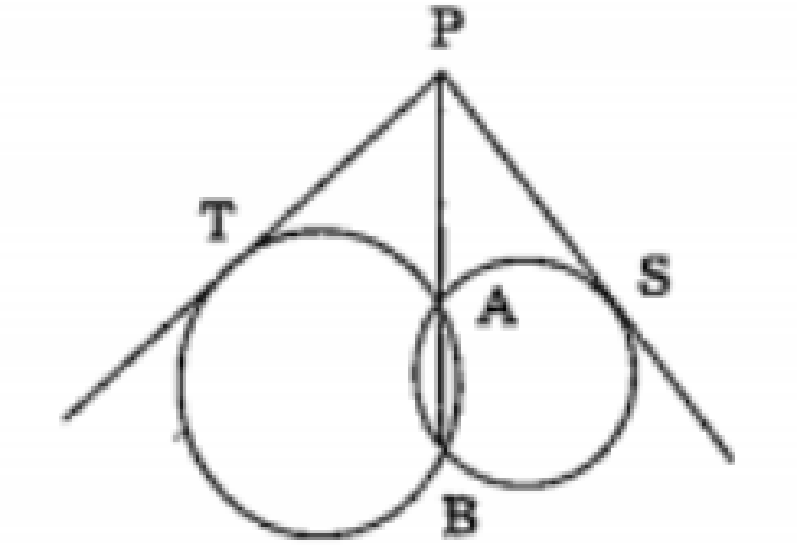
C. 45°

D. 30°

Answer:

Watch Video Solution

66. Two circles intersect at A, B, PS, PT are two tangents drawn from P which lies on AB to the two circles, then.....



A. $PS = 2PT$

B. $PT = 2PS$

C. $PS = PT$

D. $PS \neq PT$

Answer:

Watch Video Solution

67. In the figures AB is a diameter and Ac is chord of the circle such that $\angle BAC = 30^\circ$. If DC is a tangent , then ΔBCD is .....

A. isosceles

B. equilateral

C. right angled

D. acute angled

Answer:

Watch Video Solution

68. To draw a pair of tangents to a circle which are inclined to each other at an angle of 60° it is required to draw the tangents at the end points of two radii inclined at an angle of .....

A. 30°

B. 60°

C. 90°

D. 120°

Answer:

Watch Video Solution

69. If the radii of two concentric circles are 5 cm and 13 cm then the length of the chord of one circle which is tangent to the other circle is .....

A. 24 cm

B. 18 cm

C. 12 cm

D. 6 cm

Answer:

Watch Video Solution

70. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at angle of 110° , then

$\angle POA$ is equal to

A. 45°

B. 50°

C. 70°

D. 35°

Answer:

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71. In a right triangle ABC, right angled at B , BC = 15 cm and AB = 8 cm . A circle is inscribed in the traiangle ABC . The radius of the circle is .....

A. 1 cm

B. 3 cm

C. 5 cm

D. 2 cm

Answer:

Watch Video Solution

72. Three circles are drawn with the vertices of a traingle as centres such that each circle touches the other two . If the sides of the traiangle are 2 cm , 3 cm , 4 cm find the diameter of the smallest circle .

A. 4 cm

B. 2 cm

C. 1 cm

D. 5 cm

Answer:

Watch Video Solution

73. A circle may have ..... parallel tangents utmost.

A. 10

B. 12

C. 9

D. 2

Answer:

Watch Video Solution

74. A tangent to a circle intersects it in ..... Point (s) .

A. 1

B. 2

C. 3

D. 4

Answer:

Watch Video Solution

75. A line segment joining any point on a circle is called its .....

A. diameter

B. tangent

C. chord

D. none

Answer:

Watch Video Solution

76. A line which intersects the given circle at two distinct points is called a .....

A. tangent

B. secant

C. circle

D. centre

Answer:

Watch Video Solution

77. The common point to a tangent and a circle is called .....

A. point of contact

B. circle

C. tangent

D. none

Answer:

Watch Video Solution

78. Angle between the tangent and radius drawn through the point of contact is .....

A. 100°

B. 70°

C. 80°

D. 90°

Answer:

Watch Video Solution

79. The circumference of a circle is 100 cm . The side of a square inscribed in the circle is ..... Cm .

A. $\frac{1}{\pi}$

B. $5\frac{\sqrt{2}}{\pi}$

C. $50\frac{\sqrt{2}}{\pi}$

D. $50\sqrt{2}$

Answer:

Watch Video Solution

80. The area of a square inscribed in a circle of radius 8 cm is .....cm^2 .

A. 118

B. 129

C. 160

D. 128

Answer:

Watch Video Solution

81. The area of a circle that can be inscrinbed in a square of side 6 cm is .....

A. 9π

B. 12π

C. 120π

D. none

Answer:

Watch Video Solution

82. The perimeter of a quadrant of a circle of radius $\frac{7}{2}$ cm is .....cm

A. 9.5

B. 12.5

C. 10.5

D. 2

Answer:

Watch Video Solution

83. The number of tangents at one point of a circle is .....

A. 1

B. 2

C. 3

D. 10

Answer:

Watch Video Solution

84. Number of tangents to a circle which are parallel to a secant are .....

A. 1

B. 10

C. 9

D. 2

Answer:

Watch Video Solution

85. .....tangent can be drawn from a point inside a circle .

A. No

B. 1

C. 4

D. None

Answer:

Watch Video Solution

86. A line which is perpendicular to the radius of the circle through the point of contact is called a .....

A. secant

B. tangent

C. chord

D. none

Answer:

Watch Video Solution

87. The number of tangents draw at the end of the diameter is .....

A. parallel

B. 0

C. perpendicular

D. none

Answer:

Watch Video Solution

88. The tangents drawn at the end point of radius is .....

A. 0

B. parallel

C. perpendicular

D. none

Answer:

Watch Video Solution

89. Tangents drawn from an exterior point of a circle are.....

A. not equal

B. parallel

C. equal

D. none

Answer:

Watch Video Solution

90. A secant meets a circle in .....points .

A. 2

B. 4

C. 3

D. 1

Answer:

Watch Video Solution

91. A tangent meets a circle in..... Points .

A. 10

B. 9

C. 7

D. 1

Answer:

Watch Video Solution

92. Sum of the central angles in a circle is .....

A. 360°

B. 300°

C. 180°

D. 110°

Answer:

Watch Video Solution

93. Angle in a semi -circle at the centre is .....

A. 100°

B. 180°

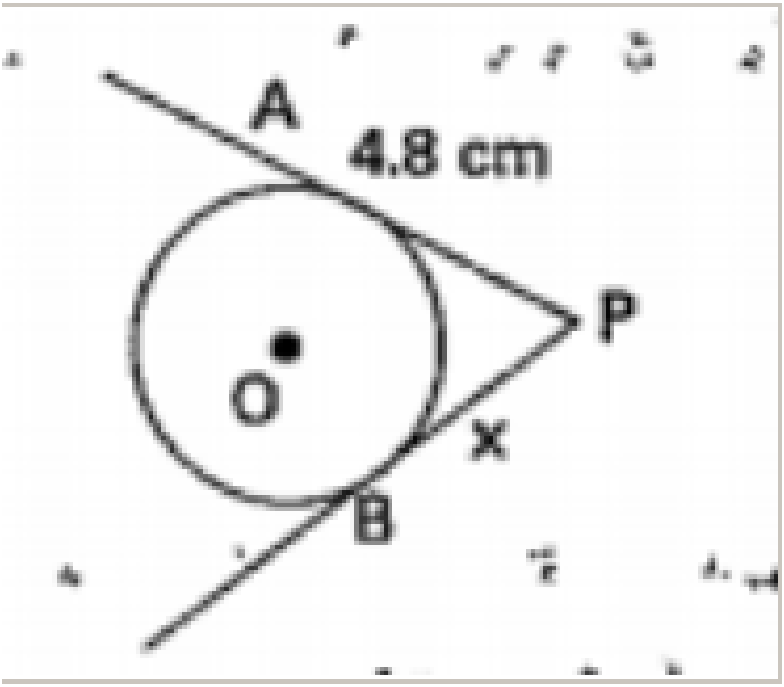
C. 200°

D. 80°

Answer:

Watch Video Solution

94. From the figure, x=.....cm.



A. 8.4

B. 8.8

C. 4.8

D. 4

Answer:

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

A. 80°

B. 90°

C. 100°

D. 110°

Answer:

Watch Video Solution

96. Number of tangents drawn to a circle is .....

A. 1

B. 4

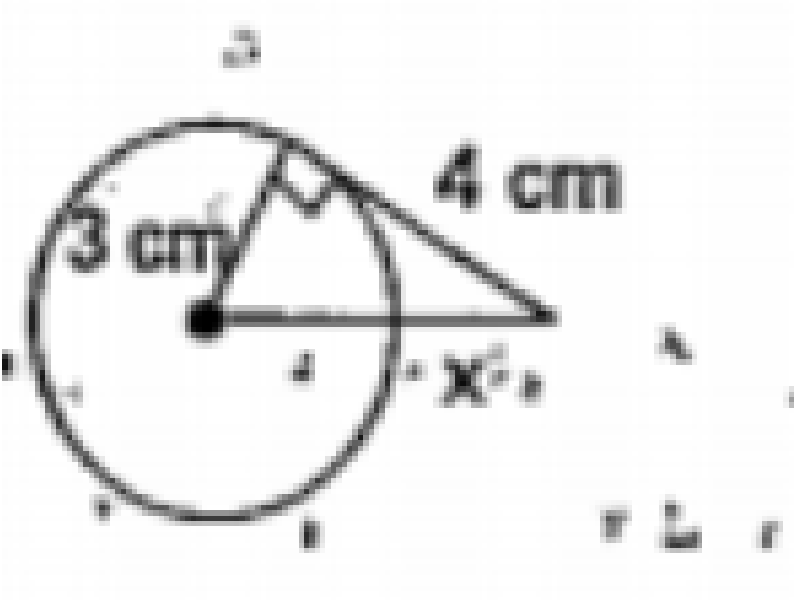
C. 3

D. infinite

Answer:

Watch Video Solution

97. In the figure, x= .....cm.



A. 5

B. 6

C. 8.2

D. 10

Answer:

Watch Video Solution

98. Angle in a minor segment is .....

A. acute

B. 60°

C. obtuse

D. none

Answer:

Watch Video Solution

99. In a circle d = 10.2 cm , then r = ...cm .

A. 4.1

B. 5.1

C. 4.6

D. 5.6

Answer:

Watch Video Solution

100. The longest chord in a circle is .....

A. diameter

B. radius

C. chords

D. none

Answer:

Watch Video Solution

101. Circles having saem centre are called ..... Circles .

A. triangle

B. concentric

C. trapezium

D. none

Answer:

Watch Video Solution

102. Circles having saem radii are ..

A. congruent

B. not congruent

C. only similar

D. none

Answer:

Watch Video Solution

103. Area of circle is ..... Sq . Units .

A. $\frac{\pi}{r^2}$

B. πr^3

C. πr^2

D. $\pi^2 r^2$

Answer:

Watch Video Solution

104. The shaded portion represents .....

A. minor segment

B. major segment

C. chord

D. none

Answer:

Watch Video Solution

105. Area of semi-circle is .....

A. πr^2

B. $\pi^2 r$

C. $\frac{\pi r^2}{2}$

D. πr

Answer:

Watch Video Solution

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

A. 1

B. 0

C. 9

D. 12

Answer:

Watch Video Solution

107. Sum of opposite angles in a cyclic quadrilateral is .....

A. 100°

B. 180°

C. 190°

D. 200°

Answer:

Watch Video Solution

108. Cyclic rhombus is a .....

A. rhombus

B. parallelogram

C. triangle

D. none

Answer:

Watch Video Solution

109. In the figure, $\angle BAC$=.....

A. 90°

B. 70°

C. 30°

D. none

Answer:

Watch Video Solution

110. Area of sector = ...

A. $\frac{x^\circ}{360} \times \pi r^2$

B. $\frac{x^\circ}{360} \times 2\pi r$

C. lb

D. none

Answer:

Watch Video Solution

111. Area of ring = ...

A. $\pi\left(R^2 - r^2\right)$

B. $\pi(R - r)$

C. $R^2 - r^2$

D. $\pi\left(R^2 - r^2 + 2r\right)$

Answer:

Watch Video Solution

112. Side of a square is 4 cm , then A= ..... cm^2

A. 64

B. 12

C. 16

D. 20

Answer:

Watch Video Solution

113. Diameter of a circle passes through .....

A. equal

B. point

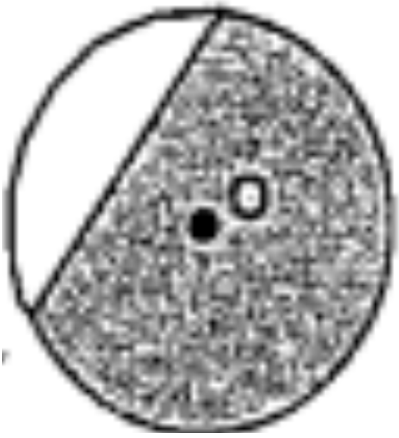
C. centre

D. none

Answer:

Watch Video Solution

114. The shaded portion represents.....segment.



A. major

B. minor

C. acute

D. none

Answer:

Watch Video Solution

115. Which of the following is a semicircle ?

A. 

B. 

C. 

D. all

Answer:

Watch Video Solution

116. Angle in the same segment of the circle .....

A. equal

B. not equal

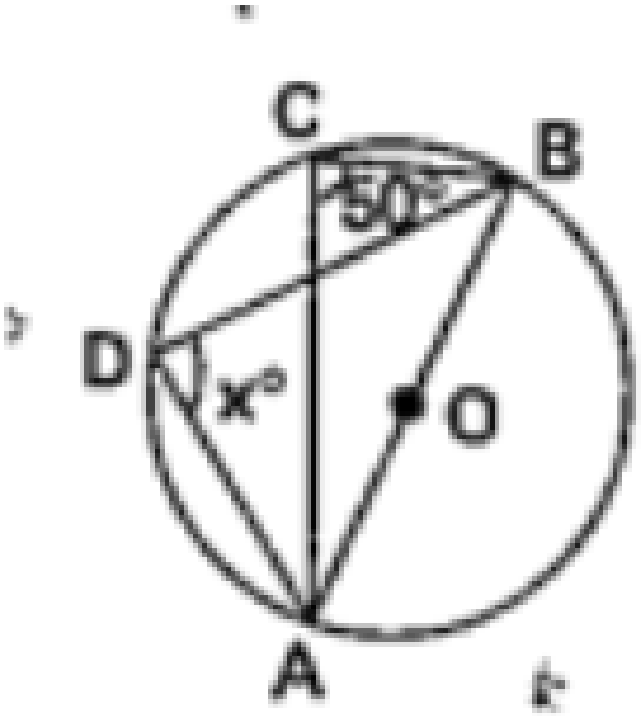
C. none

D.

Answer:

Watch Video Solution

117. In the figure, x° =.....



A. 30°

B. 110°

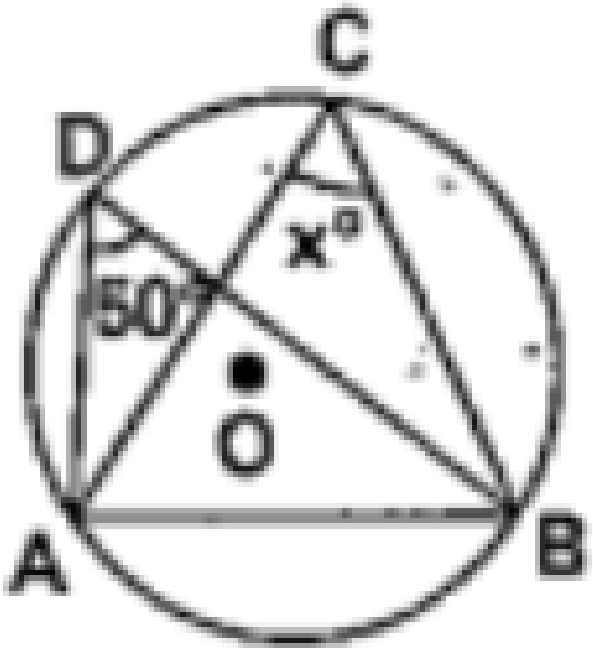
C. 60°

D. none

Answer:

Watch Video Solution

118. In the figure, x = ...



A. 20°

B. 90°

C. 60°

D. 80°

Answer:

Watch Video Solution

119. Area of triangle = ...sq. units .

A. bh

B. $\frac{1}{2}bh$

C. $\frac{b+h}{2}$

D. none

Answer:

Watch Video Solution

120. Area of square whose is 3 cm in .....cm^2

A. 6

B. 12

C. 10

D. 9

Answer:

Watch Video Solution

121. Area of circle with radius r = ... cm^2

A. πr^4

B. πr

C. πr^2

D. $\frac{\pi}{2}$

Answer:

Watch Video Solution

122. The area of square is 49 cm^2 then side is ..... Cm .

A. 12

B. 6

C. 8

D. 7

Answer:

Watch Video Solution

123. Angle made by minute hand in 1 m = ...

A. 6°

B. 12°

C. 10°

D. none

Answer:

Watch Video Solution

124. $x^\circ = 60^\circ, r = 14$ cm then area of sector = ... cm^2

A. 100.6

B. 102.66

C. 811.6

D. none

Answer:

Watch Video Solution

125. Area of a regular hexagon whose side is 'a' cm is.....

A. $\frac{6\sqrt{3}}{4}a^2$

B. $\frac{6\sqrt{3}}{7}a^2$

C. $\frac{6}{7}\sqrt{3}a^2$

D. none

Answer:

Watch Video Solution

126. Parallelogram circumscribing a circle is a .....

A. parallelogram

B. rhombus

C. circle

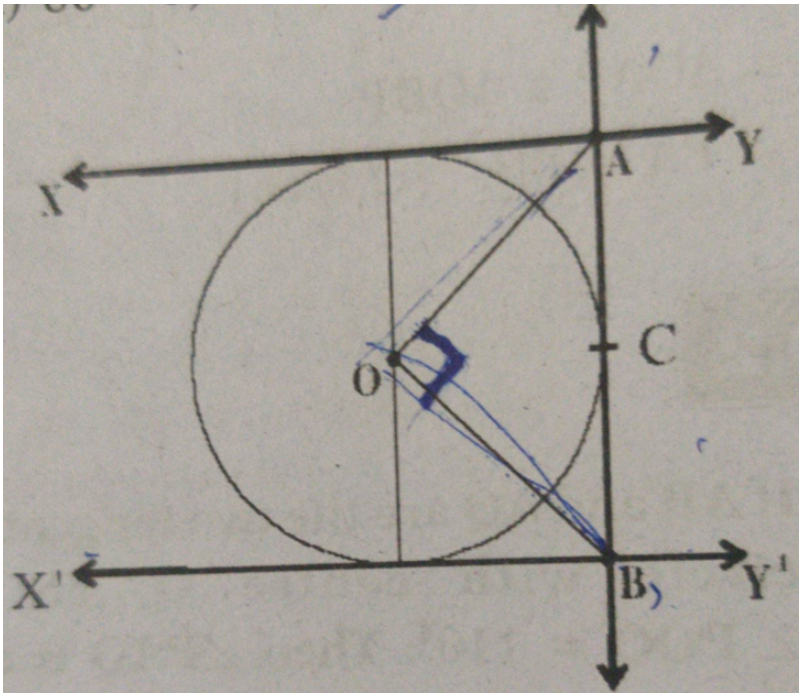
D. none

Answer:

Watch Video Solution

127. In the figure XY and X'Y' are two parallel tangents to a circle with centre O and another tangent AB with point of

cantact C intersecting XY at A and X'Y' at B then `angle AOB=



A. 75°

B. 95°

C. 70°

D. 90°

Answer:

Watch Video Solution

128. Choose the correct answer and give justification for each .

The angles between a tangent to a circle and the radius draw at the point of contact is

A. 60°

B. 70°

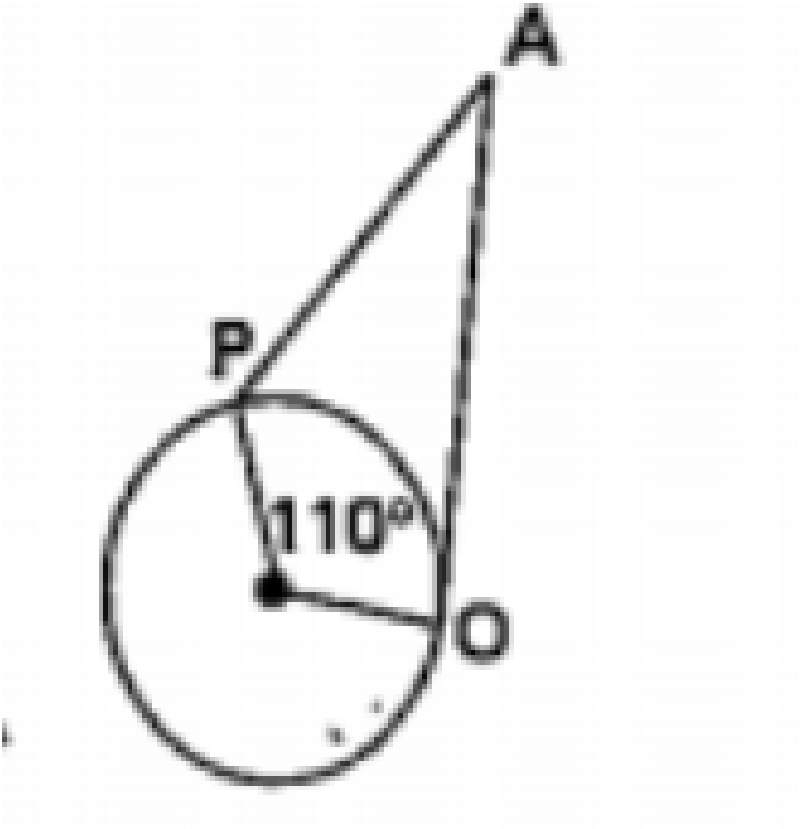
C. 90°

D. 20°

Answer:

Watch Video Solution

129. If AP and AQ are the two tangents of a circle with centre 'O'. So that POQ = 110° then $\angle PAQ$=.....



A. 70°

B. 60°

C. 65°

D. 75°

Answer:

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130. Area of circle interms of diameter is .....

A. $(\pi d^2)/4$`

B. πr^2

C. $(\pi d^2)/14$`

D. all

Answer:

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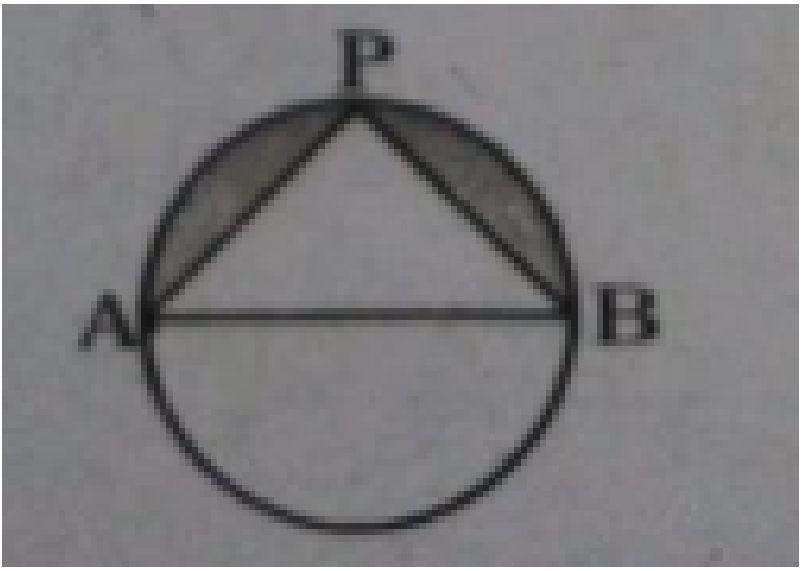
131. In the figure AP , = 12 cm , PB = 16 cm and `pi=3 then perimeter of shaded region is ..... Cm .



A. 51

B. 70

C. 58

D. 68

Answer:

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132. A bicycle wheel makes 75 revolutions per minute to maintain a speed of 8.91 km per hour then diameter of the wheel is ..... m .

A. 6.3

B. 0.63

C. 8.1

D. none

Answer:

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133. Angle described by hour hand in 12 hoours is .....

A. 90°

B. 200°

C. 360°

D. 180°

Answer:

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134. Each angle in a square is .....

A. 85°

B. right angle

C. 60°

D. 70°

Answer:

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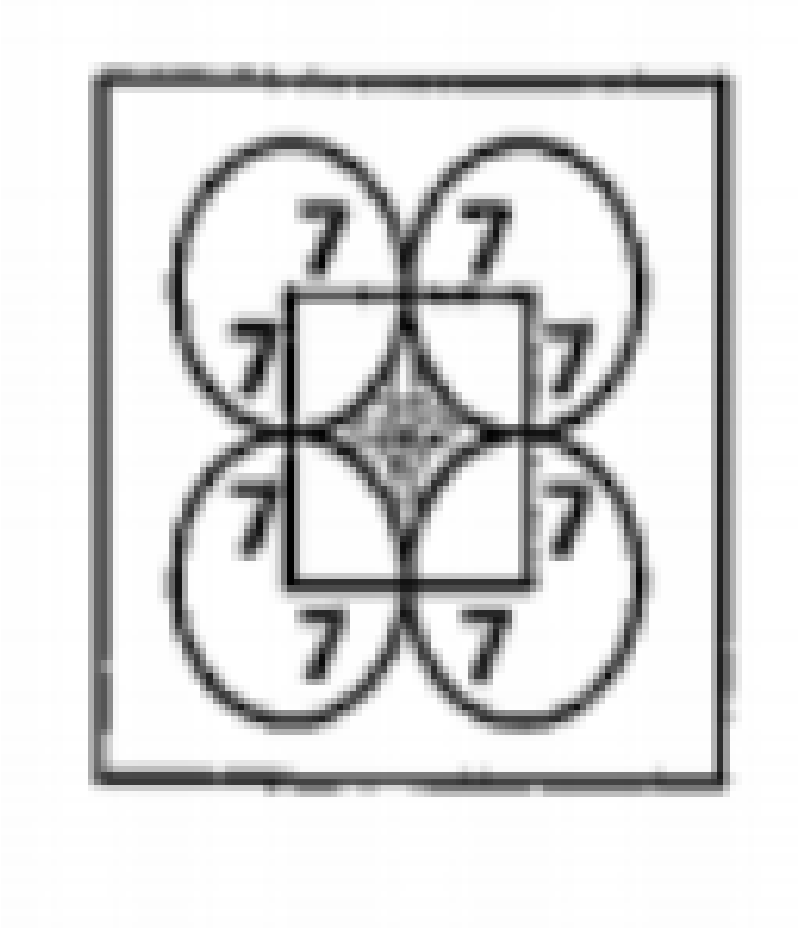
135. In the figure, the area of shaded region is.....cm^2.



A. 74

B. 60

C. 82

D. 42

Answer:

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136. Perimeter of semicircle is ..... Units .

A. $\frac{36r}{7}$

B. $\frac{18}{7}r$

C. $\frac{9}{17}r$

D. none

Answer:

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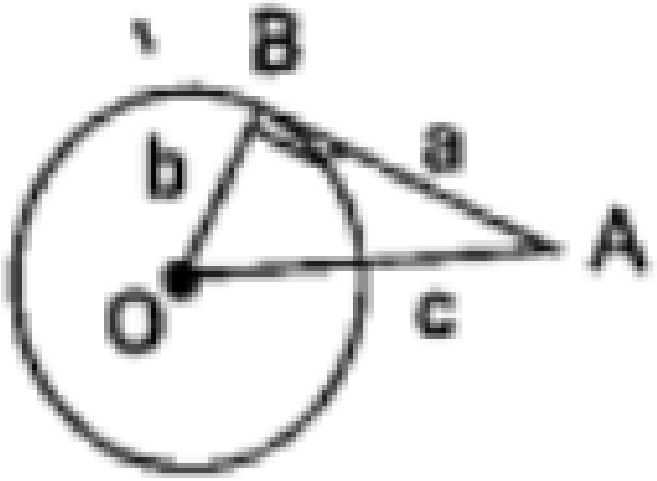
137. In the figure the relation among a, b and c is.....



A. $c^2 = a^2 + b^2$

B. $c^2 - a^2$ = 2b^2`

C. $c^2 + b^2 = a^2$

D. all

Answer:

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138. In the figure, a =.....

A. 100°

B. 170°

C. 80°

D. 90°

Answer:

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139. Perimeter of sectors = ...

A. l + 2r

B. l - r

C. l - 2r

D. none

Answer:

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140. The radius of a circle is doubled then its area becomes ..... Times.

A. 5

B. 4

C. 9

D. none

Answer:

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141. If two concentric circles, a chord of length 40 cm of larger circle becomes a tangent to the smallor circle whose radius is 15 cm. Find the radius of the larger circle.

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142. A chord of circle of radius 10 cm subtends a right angle at the centre . Find the area of the corresponding :

Minor segment

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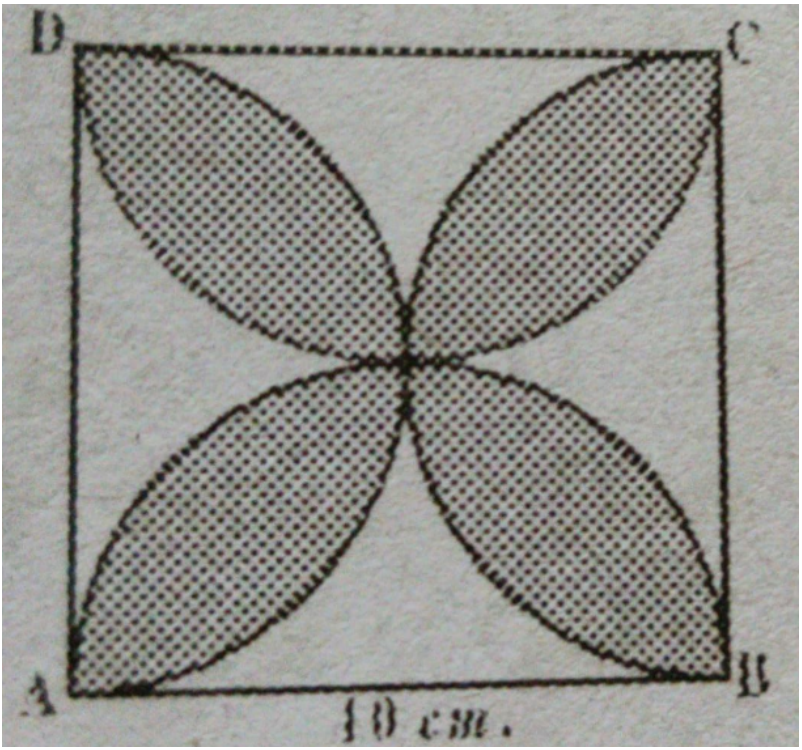
143. Find the area of the shaded region in figure , where ABCD is a square of side 10 cm .and semicircles are draw

with each side of the square as diameter (use $\pi = 3.14$).



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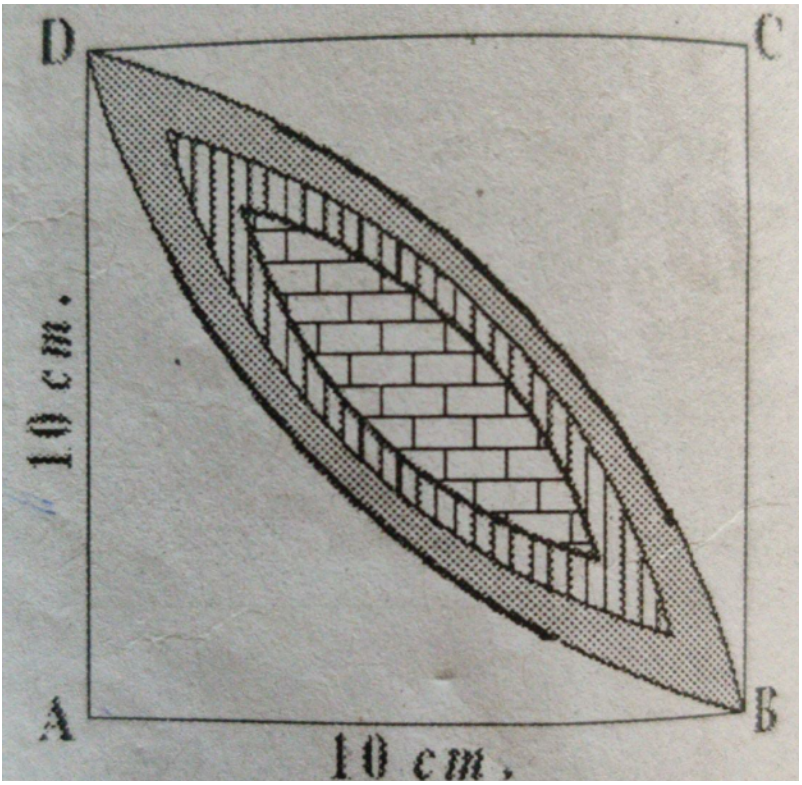
144. Calculate the area of the desigred region in figure , common between the two quadrants of the circles of

radius 10 cm each . (use $\pi = 3.14$)



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145. If two tangents inclined at an angle of 60° are drawn to a circle of radius 3 cm, then length of tangents is equal to.....m.

A. 6

B. $3\sqrt{3}$

C. 3

D. $\frac{3\sqrt{3}}{4}$

Answer:

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146. A tangent to a circle is a line which ..... The circleexactly at one point .

A. touches

B. 2

C. separates

D. none

Answer:

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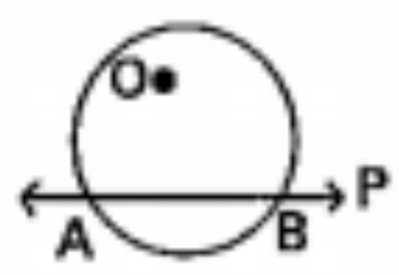
147. In the figure, P is called .....



A. secant

B. tangent

C. chord

D. none

Answer:

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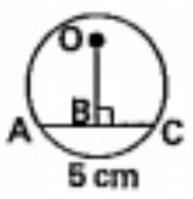
148. In the figure, BC = ...cm.



A. 1.4

B. 2.3

C. 1.5

D. 2.5

Answer:

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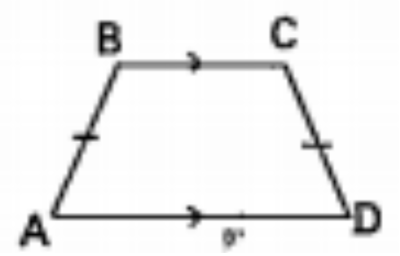
149. The below figure represents.....



A. isosceles triangle

B. rectangle

C. triangle

D. none

Answer:

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150. ABCD is a cyclic quadrilateral then $\angle A + \angle C$ = ...

A. 100°

B. 120°

C. 109°

D. 180°

Answer:

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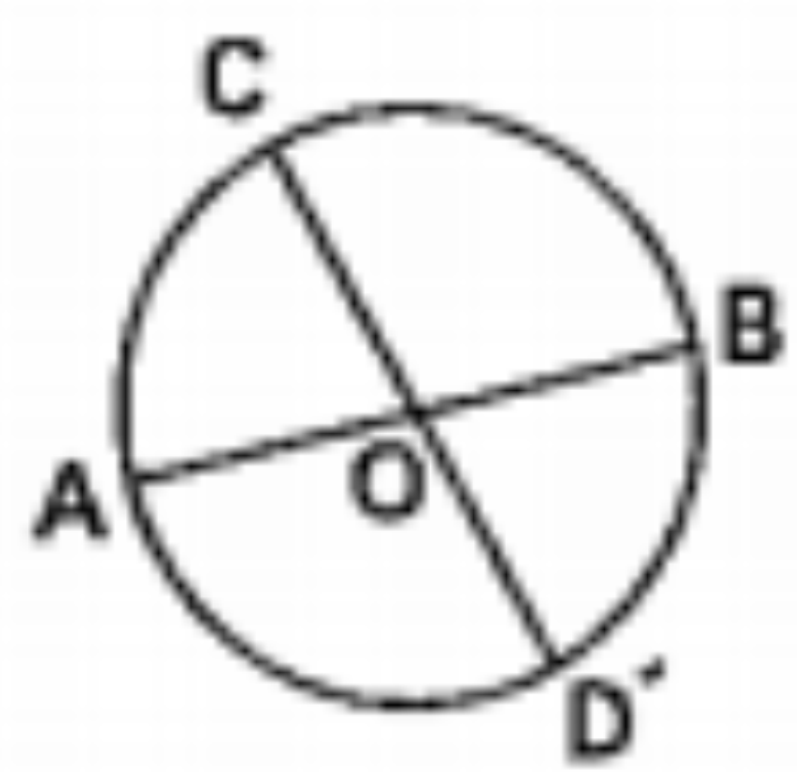
151. In the fiugre, AB = 6.2 then CD = ...cm.



A. 5.2

B. 6.2

C. 8.2

D. none

Answer:

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152. If raddi pf two concentric circle are 6 cm and 10 cm , then lngth of chord of the larger circle wchich is tangent to other is .....cm

A. 8 cm

B. 12 cm

C. 16 cm

D. 20 cm

Answer:

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153. The length of the tangents to frome a point A to a circle of radius 3 cm is 4 cm then the distance between A and the centre to the circle is .....

A. 2 cm

B. 10 cm

C. 4 cm

D. 5 cm

Answer:

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154. Number of chords of a circle is .....

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155. How many chords have in one circle.

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156. The longest chord in a circle is .....

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157. In a circle d = 10.2 cm , then r = ...cm .

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