



MATHS

BOOKS - VGS BRILLIANT MATHS (TELUGU ENGLISH)

TANGENT AND SECANTS TO A CIRCLE

Example

1. Draw a pair of tangents to circle of radius 5 cm which are inclined to each other at an

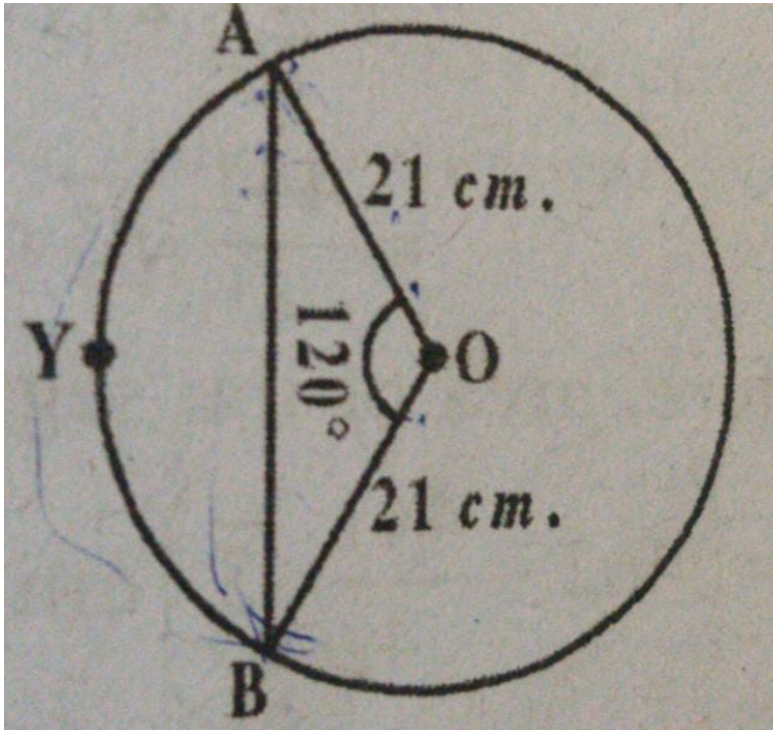
angle 60° .



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2. 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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3. Find the area of the shaded in figure , if $PQ = 24\text{cm}$, $PR = 7\text{cm}$. And QR is the diameter of the

circle with centre O . (Take $\pi = \frac{22}{7}$)



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4. A round table top has six equal designs 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 $\sqrt{3} = 1.732$)



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Do This

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



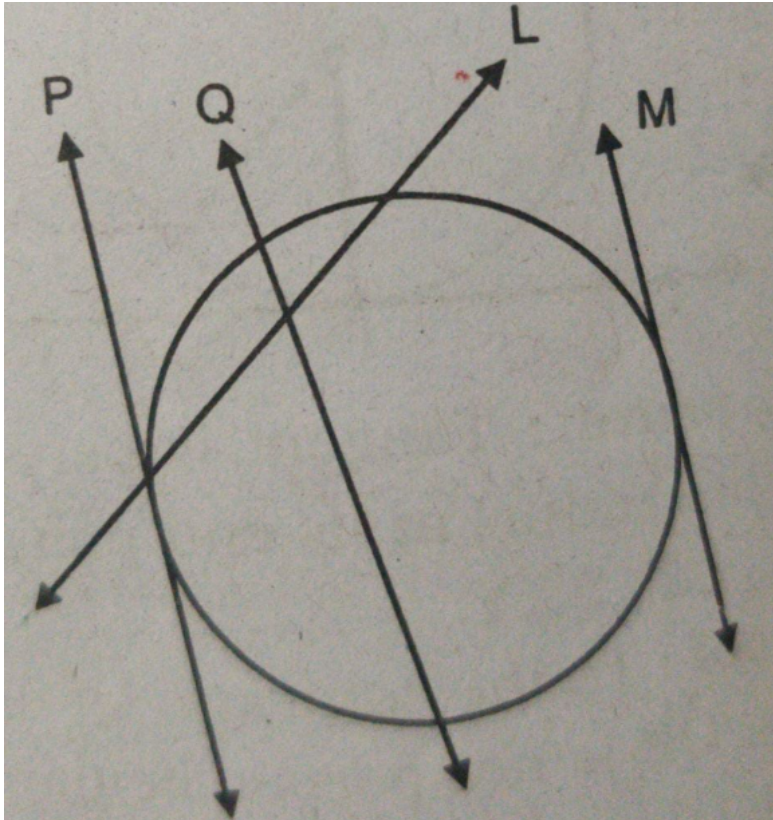
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2. How many tangents you can draw to circle from a point away from it ?



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3. In the below figure which are tangents to the given circles ?

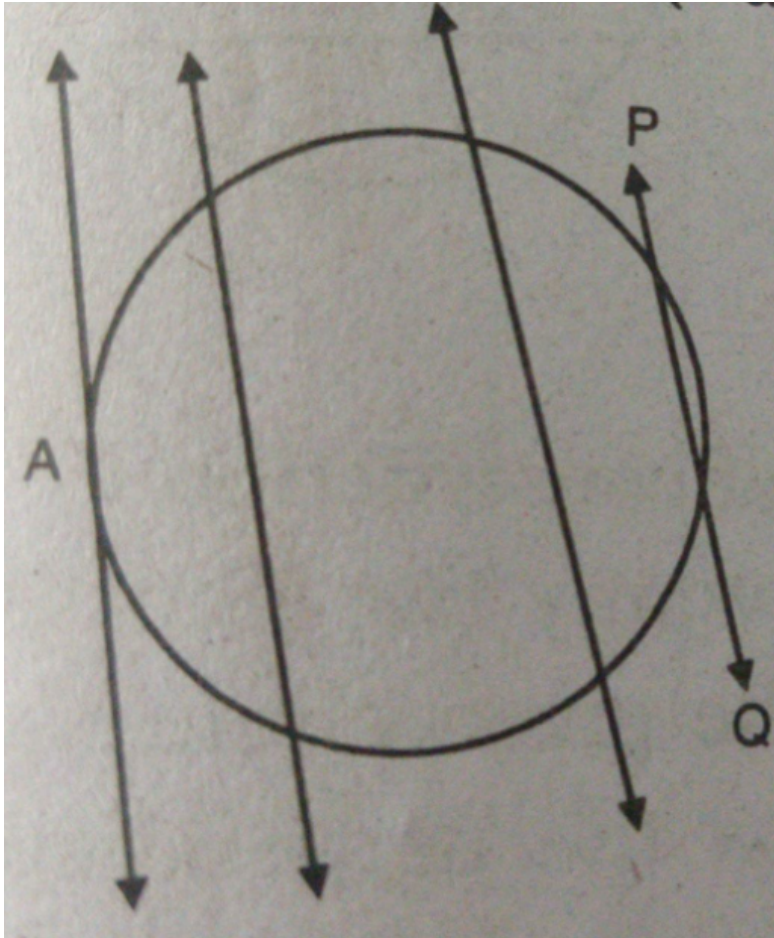


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4. Draw a circle and a secant PQ of the circle on a paper as shown below. Draw various lines parallel to the secant on both sides of it .

What happens to the length of chord coming

closer to the centre of the circle ?



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5. What is the longest chord ?



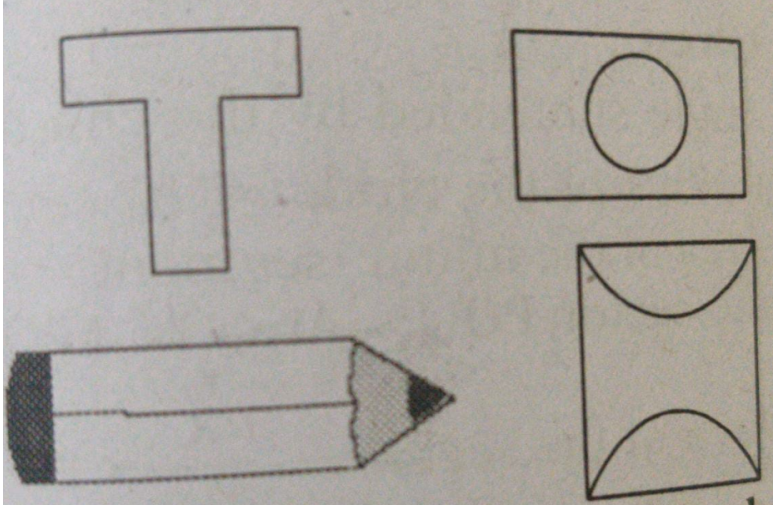
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6. How many tangents can you draw to a circle , which are parallel to each other ?



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7. Shankar made the the following pictures also with washbasin.



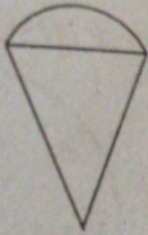
what shapes can they be broken into that we can find area easily ?



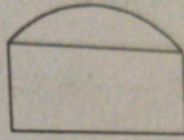
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8. Make some more pictures and think of the shapes they can be divided into different parts

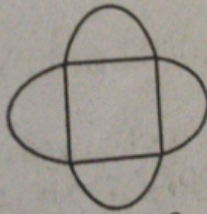
Make some more pictures and think of the shapes they can be divided into different parts.



A cone and
segment



A rectangle and
a segment



A square and four segments



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

60°



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

30°



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

72°



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

90°



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

120°



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14. 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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Try This

1. 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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2. 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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3. 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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4. 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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5. How can you find the area of major segment using area of minor segment ?



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Exercise 9 1 Fill In The Blanks

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



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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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Exercise 9 1

1. 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 $OQ = 12\text{cm}$. Find length of PQ .



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2. 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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3. 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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4. Prove that the tangents to a circle at the end points of a diameter are parallel .



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1. 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: D



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

A. 7 cm

B. 12 cm

C. 15 cm

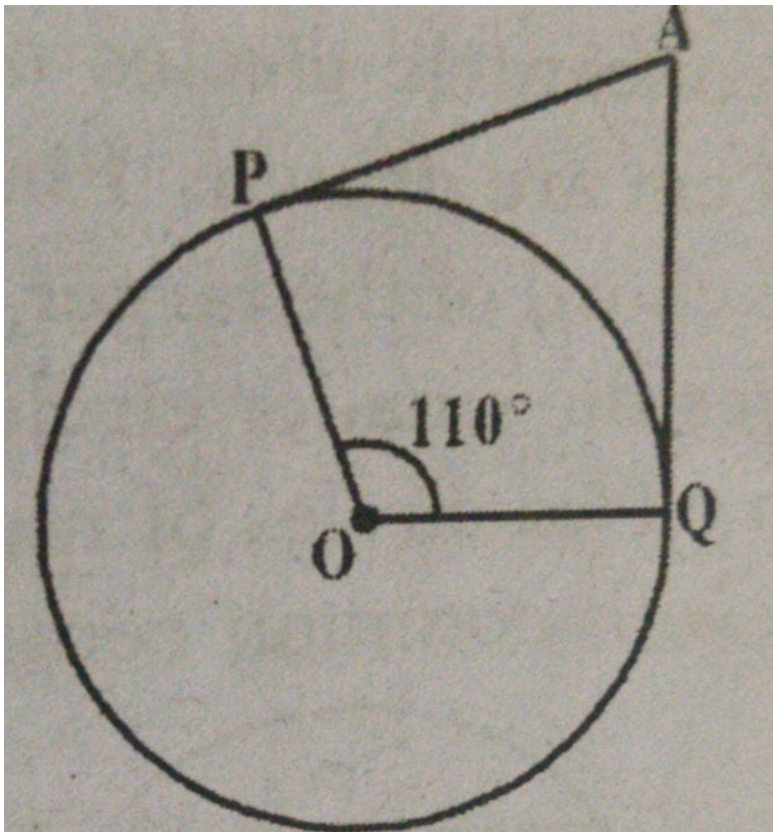
D. 24.5 cm

Answer: A



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



A. 60°

B. 70°

C. 80°

D. 90°

Answer: B



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4. 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. $60^\circ C$

C. 70°

D. 80°

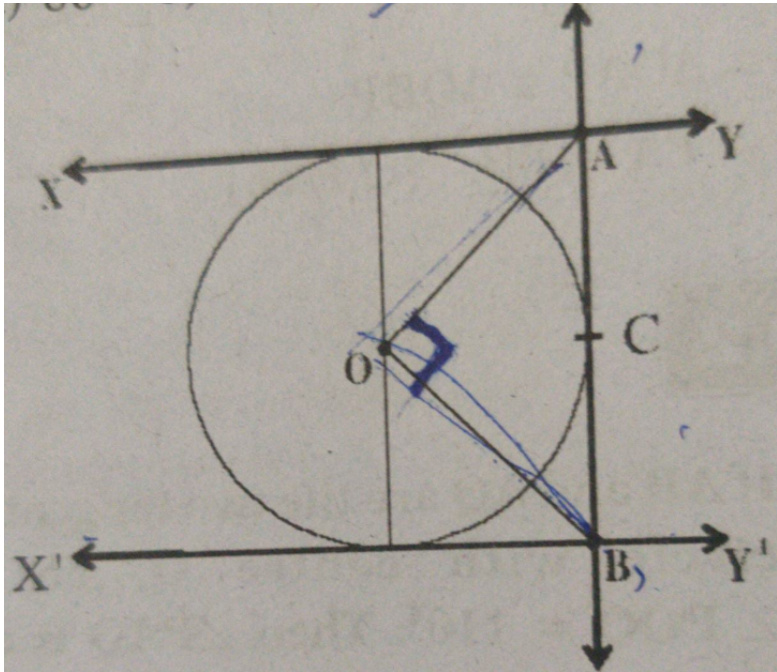
Answer:



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

intersecting XY at A and $X'Y'$ at B then $\angle AOB =$



$AOB =$

- A. $80^\circ C$
- B. $100^\circ C$
- C. 90°
- D. 60°

Answer: C



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



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7. Parallelogram circumscribing a circle is a



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8. 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. respectively. Find the sides AB and AC .



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9. 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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10. 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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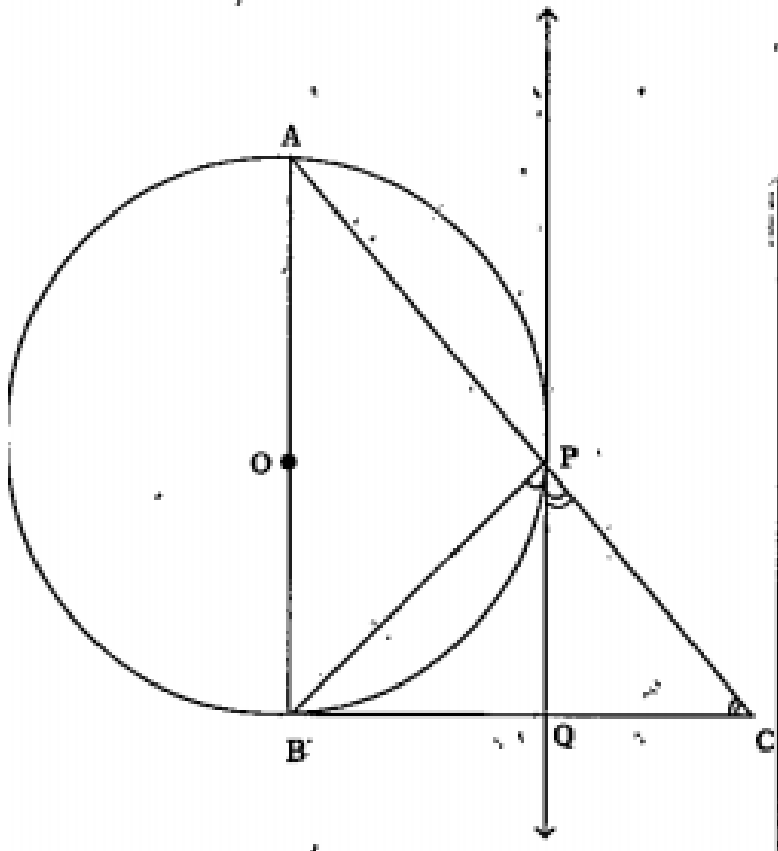
11. Draw a circle with the help of a bangle , take a point outside the circle . Construct the pair of tangents from this point to the circle measure them . Write conclusion .



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12. 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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Exercise 9 3

1. 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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2. 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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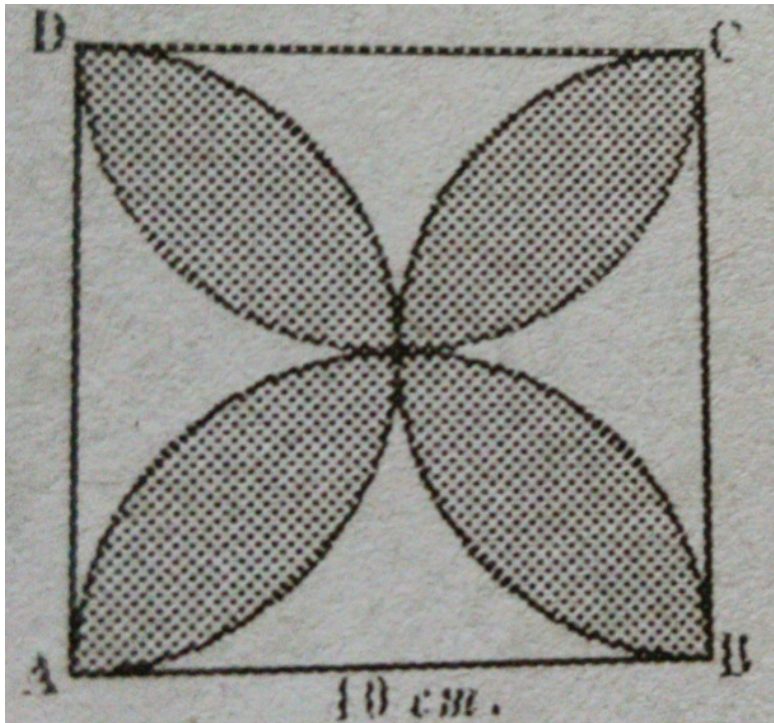
3. A car has two wipers which do not overlap. Each wiper has a blade of length 25 cm sweeping through an angle of 115° . Find the total area cleaned at the sweep of the blades .

(use $\pi = \frac{22}{7}$)



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4. 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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5. Find the area 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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6. 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 $\pi = \frac{22}{7}$)



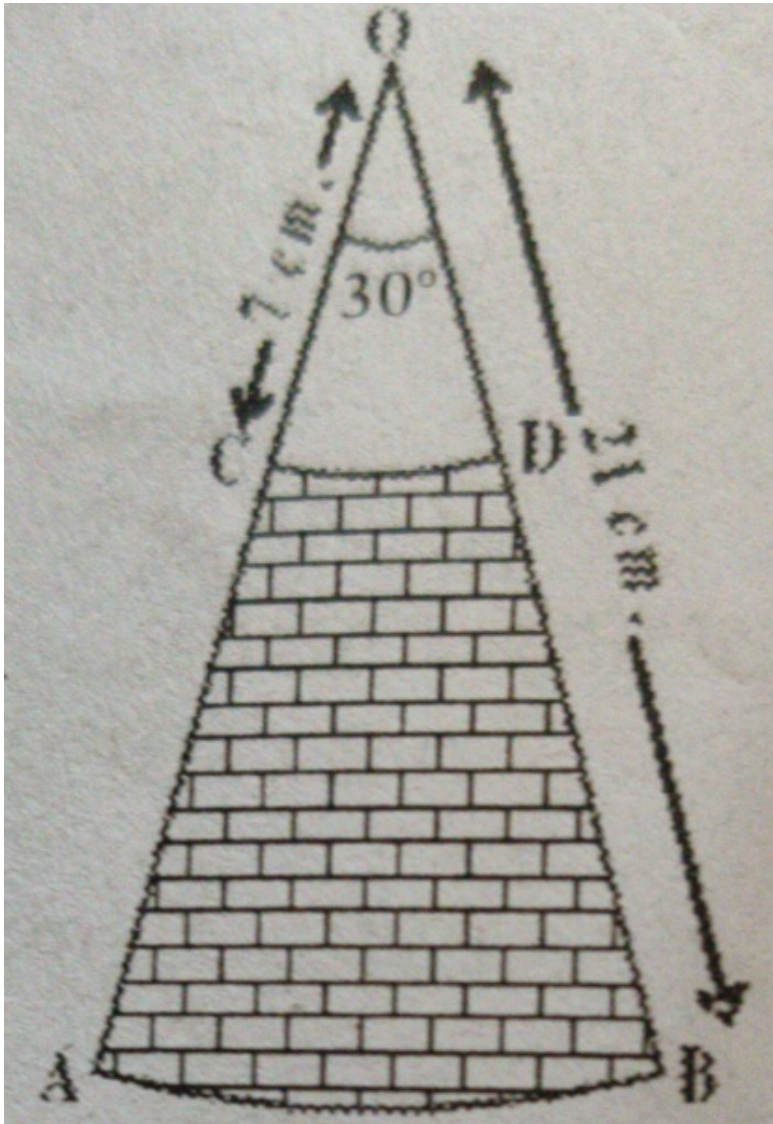
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7. AB and CD are respectively arcs of two concentric circles of radii 21 cm and 7 cm .

With centre O (See figure). If $\angle AOB = 30^\circ$

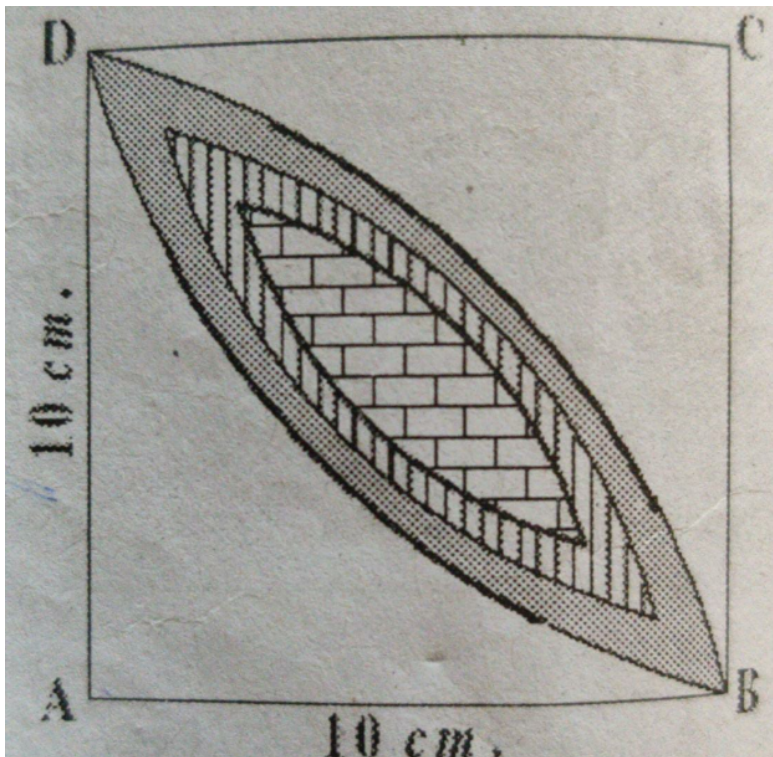
,find the area of the shaded region . (use

$$\pi = \frac{22}{7}$$



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



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Optional Exercise

1. 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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2. 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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3. Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle .



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4. 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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5. 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 . Construct the tangents from A to this circle .

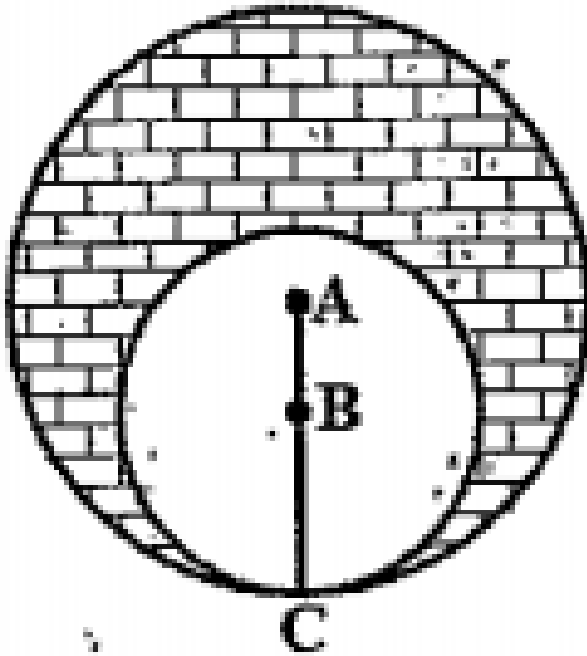


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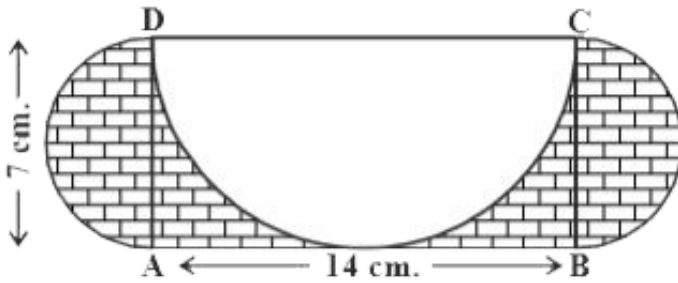
6. find the area of the shaded region in figure, given in which two circles with centers A and B touch each other at the point C. If $AC = 8\text{cm}$

and

$AB=3\text{cm}$.



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7.

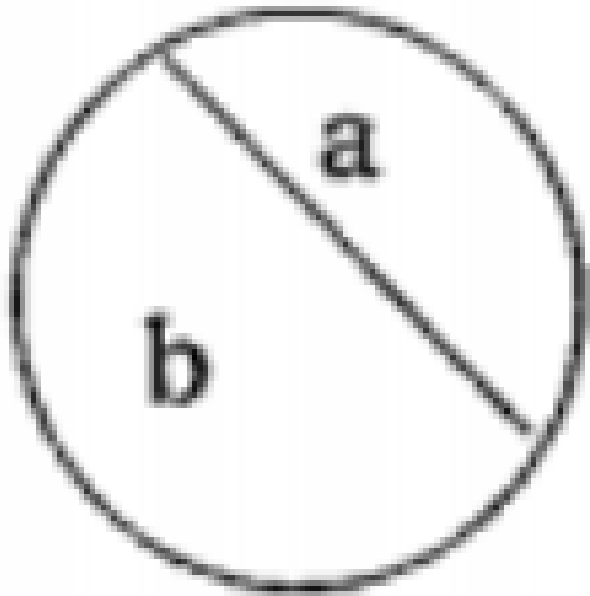
ABCD is a rectangle with $AB = 14\text{cm}$ and $BC = 7\text{cm}$. Taking DC, BC and AD as diameters, three semicircles are drawn as shown in the figure. Find the area of shaded region.



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Observation Material To Solve Various Questions Given In The Public Examination Part A 1 Mark Questions

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



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2. Calculate the length of the tangent from a point 13 cm away from the center of a circle of radius 5 cm .



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



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4. Find the length of the tangent from a point , which is 9.1 cm away from the centre of the circle , whose radius is 8.4 cm.



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5. "The length of the tangent from an external point 'P' to a circle with centre 'O' is always less than OP " . Is this statement true ? Give reasons .



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6. The length of the minute hand of a clock is 3.5 cm Find the area swept by minute hand in 30 minutes . $\left(\text{use } \pi = \frac{22}{7} \right)$



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7. The length of the tangent to a circle from a point 17 cm from its centre is 8 cm . Find the radius of the circle .



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Observation Material To Solve Various Questions Given In The Public Examination Part A 2 Mark Questions

1. Prove that "in two concentric circles, a chord of the bigger circle, that touches the smaller circle is bisected at the point of contact with smaller circle".



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2. From an external point two tangents are drawn to a circle. A line joining the external point and the centre of the circle bisects the line between the tangents. Is this true or not? Justify your answer.



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3. AB is a chord of the circle and AOC is its diameter, such that $\angle ACB = 60^\circ$. If AT is

the tangent to the circle at the point A , then
find the measure of $\angle BAT$



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4. Draw a circle with 5 cm radius and construst
a pair of tangents to the circle .



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5. Find the area of the shaded region in the
given figure.

ABCD is square of side 10.5 cm.



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6. 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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**Observation Material To Solve Various Questions
Given In The Public Examination Part A 4 Mark**

Questions

1. 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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2. A chord of circle of radius 10 cm subtends a right angle at the centre . Find the area of the

corresponding :

Major segment



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3. Draw a circle of radius 3 cm . Take a point 'P' at a distance of 5 cm , from the centre of the circle . From P , draw 2 tangents to the circle.



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4. Draw a Circle of radius 4 cm . From a point 7.5 cm away from its centre , construct the pair of tangents to the circle .



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



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6. Draw a circle of radius 5 cm . From a point 8 cm away from its centre , construct a pair of tangents to the circle . Find the lengths of tangents .



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7. Two concentric circles of radii 10 cm and 6 cm are drawn . Find the length of the chord of the larger circle which touches the smaller circle .



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8. Draw a circle of diameter 6 cm from a point 5 cm away from its centre . Construct the pair of tangents to the circle and measure their length .



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9. Ten identical mementos is made by a school to awarding 10 students for first prize winners in games . If each memento is made as shown

in figure (shaded portion) its base PQRS is silver plated from the front side at the rate of RS 20 per square cm . Find the total cost of the silver plating of 10 mementos . (OR = 5 cm , RQ= 6 cm , PS = 8 cm)



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10. Draw two concentric circles of radii 1.5 cm and 4 cm . From a point 10 cm away from

its centre . Construct the pairs of tangent to the circles .



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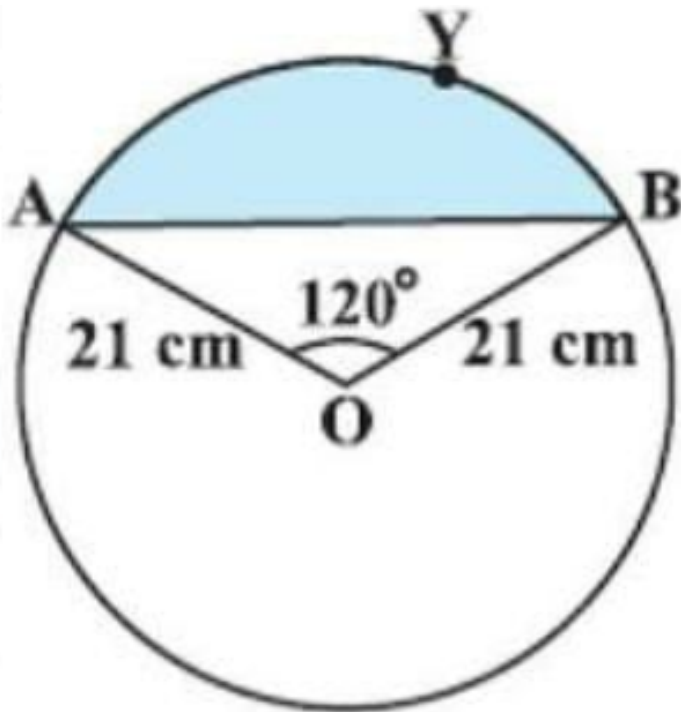
11. Draw a circle of radius 4 cm and draw a pair of tangent to the circle, which are intersecting each other 6 cm away from the centre.



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Creative Questions For Cce Model Examination

1. As shown in the figure , radius of the given circle is 21 cm and $\angle AOB = 120^\circ$. The find the area of segment AYB .



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2. In a wall clock , length of minutes needle is 7 cm . The find the area covered by it in 10 minutes of time .



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3. Find the area of a right hexagon in scribed in a circle having 14 cm of radius .



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4. Four carrom board pans are arranged as shown in figure . Radius of the pan is 3 cm each . Then find the area in between of them .



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Creative Questions For Cce Model Examination Given In The Puble Examination Part B

1. The maximum number of possible tangents that can be drawn to a circle is

A. infinity

B. 2

C. 4

D. 1

Answer: A



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

A. 60°

B. 30°

C. 45°

D. 90°

Answer: D



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3. If a circle is inscribed in a Quadrilateral then

AB + CD =

A. $BC + DA$

B. $AC + BD$

C. $2AC + 2BD$

D. $2BC + 2DA$

Answer: A



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

.....

A. 360°

B. 90°

C. 280°

D. 60°

Answer: A



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

A. 2

B. 1

C. infinity

D. 0

Answer: C



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

A. 5.1

B. 20.4

C. 10.5

D. 15.3

Answer: A



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7. Perimeter of semicircle is Units .

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

B. $\pi r + r$

C. $\pi r + 3$

D. πr

Answer: A



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8. Radius of a circle with centre 'O' is 5 cm. P is a point at a distance of 3 cm from 'O' . Then the number of tangents that can that can be dran to the circle is

A. 1

B. 2

C. 0

D. 3

Answer: C



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9. PA and PB are two tangents drawn to a circle with center O from an external point P. If $\angle APB = 30^\circ$, then $\angle AOB = \dots\dots$

A. 60°

B. 90°

C. 70°

D. 150°

Answer: D



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

A. 1

B. 2

C. 0

D. infinite

Answer: A



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

120°

A. 51.3

B. 51.4

C. 51.5

D. 51.6

Answer: A



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12. In the given figure ,

$\angle AOB = 120^\circ$, then $\angle APQ =$



A. 30°

B. 45°

C. 60°

D. 90°

Answer: A



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

A. 1

B. 2

C. 3

D. infinite

Answer: B



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

A. 60°

B. 90°

C. 180°

D. 270°

Answer: B



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15. The centre of the circle is $(2, 1)$ and one end of the diameter is $(3, -4)$. Another end of this diameter is

A. (1, 6)

B. (- 1, - 6)

C. (1, - 6)

D. (- 1.6)

Answer: A



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16. 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 exterior is 2

A. (i) only

B. ii only

C. i.and ii

D. neither (i)nor (ii)

Answer: A



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17. The length of a tangent to a circle from a point P is 12 cm and the radius of the circle is 5 cm , then the distance from point P to the centre of the circle is

A. 11 cm

B. 10 cm

C. 13 cm

D. 14 cm

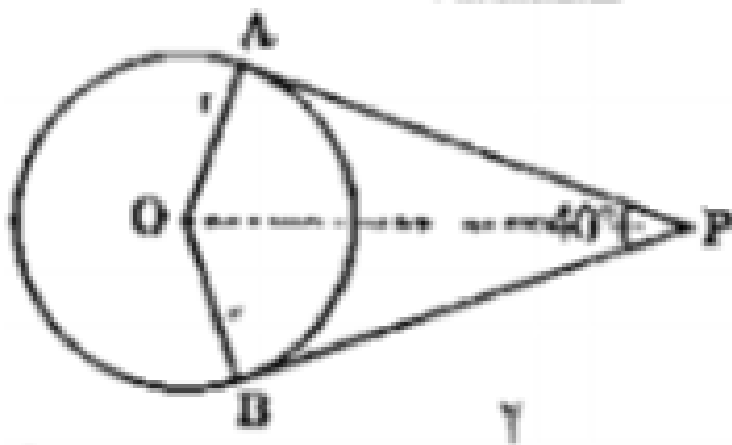
Answer: C



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18. From the adjacent figure

$\angle APB = 40^\circ$ then $\angle AOB = \dots\dots$



A. 110°

B. 140°

C. 80°

D. 160°

Answer: B



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19. If \overline{AP} and \overline{AQ} are two tangents to a circle with centre O , such that $\angle POQ = 105^\circ$, then $\angle PAQ$



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20. \overline{AB} is a tangent drawn to a circle with centre O from an external point A and B is a point of contact, then which of the following is always true?

(i) $OB > OA$

$OA > AB$

(iii) $AB > OB$

A. only (i)

B. only (ii)

C. (ii) and (iii)

D. (i) and (ii)

Answer: D



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Creative Bits For Cce Model Examination

1. 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 $OQ = 12\text{cm}$. Find length of PQ .

A. $\sqrt{79}$

B. $\sqrt{119}$

C. 119

D. 169

Answer: B



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2. If radii of two concentric circles are 6 cm and 10 cm, then length of chord of the larger circle which is tangent to the other iscm

A. 8

B. 12

C. 16

D. 20

Answer: C



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

A. 1

B. 2

C. 3

D. 4

Answer: A



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4. The length of the tangents to from 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. 3 cm

C. 4 cm

D. 5 cm

Answer: D



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5. The length of the tangent drawn from an exterior 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: B



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6. Two concentric circles of radii a and b ($a > b$) are given. The chord AB of larger circle touches the smaller circle at C , the length of AB is



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

B. $\sqrt{a^2 - b^2}$

C. $2\sqrt{a^2 + b^2}$

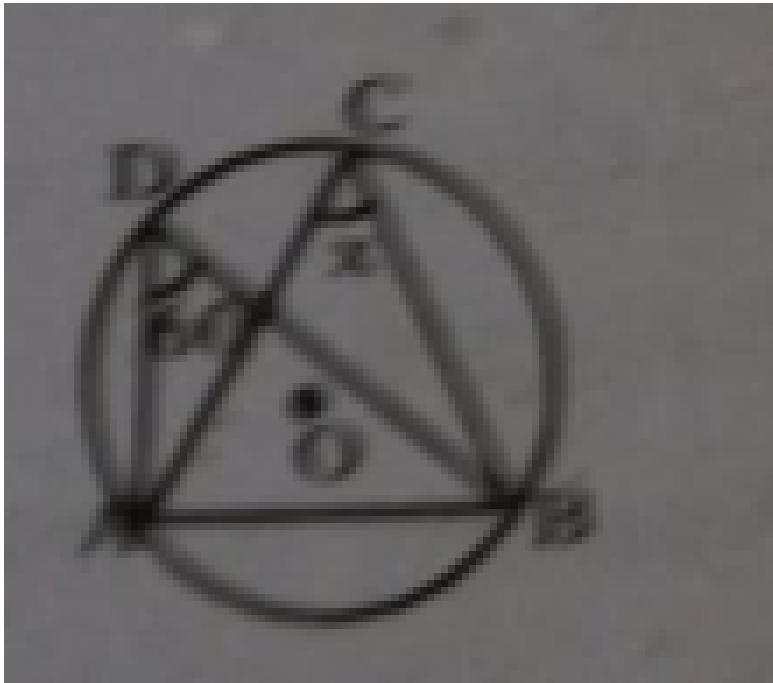
D. $\sqrt{a^2 + b^2}$

Answer: A



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7. In the figure $x = \dots\dots\dots$



A. 60°

B. 100°

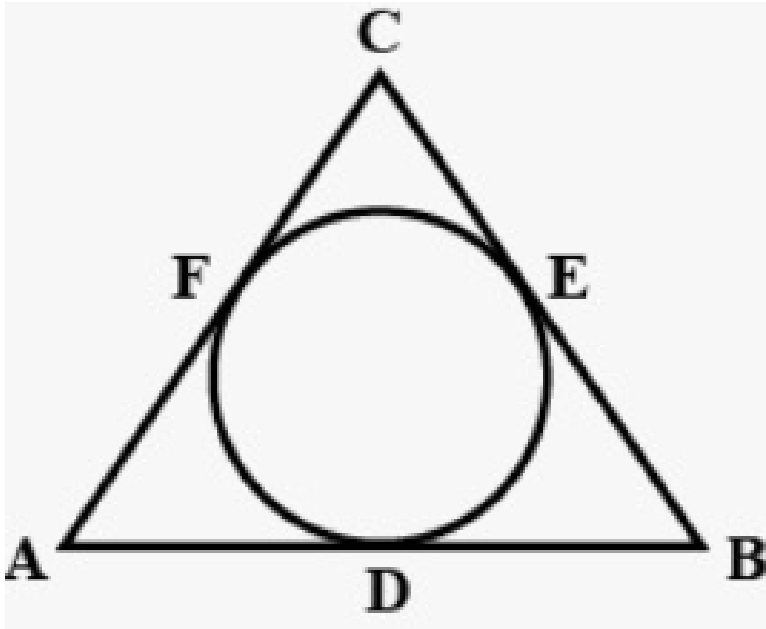
C. 110°

D. 120°

Answer: D



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8.

The semi perimeter of

$\Delta = 28\text{cm}$ then $AF + BD + CE$ is

A. 23 cm

B. 28 cm

C. 56 cm

D. 14 cm

Answer: B



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9. The length of the tangent drawn from an exterior 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. $\sqrt{7}$

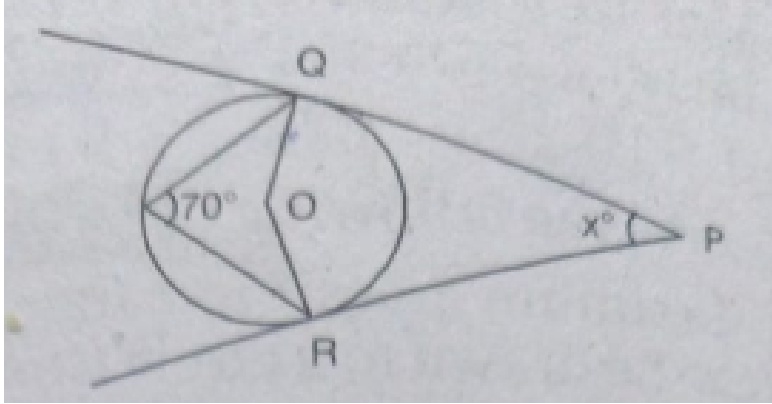
D. 10 cm

Answer: A



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10. In the figure PQ and PQ and PR are tangents to the circle with centre 'O' , then $x = \dots\dots$



A. 70°

B. 140°

C. 40°

D. 110°

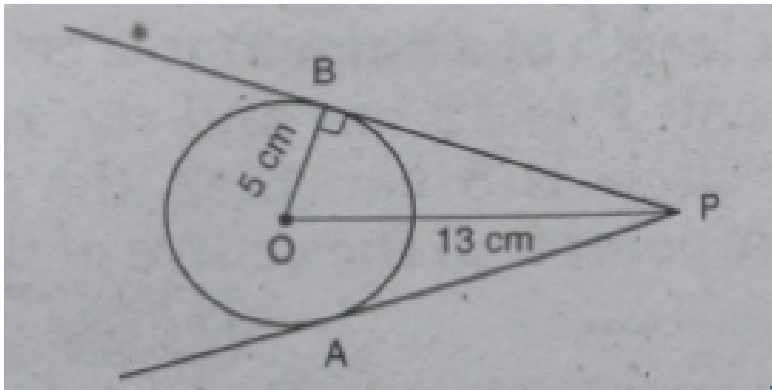
Answer: C



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

.....



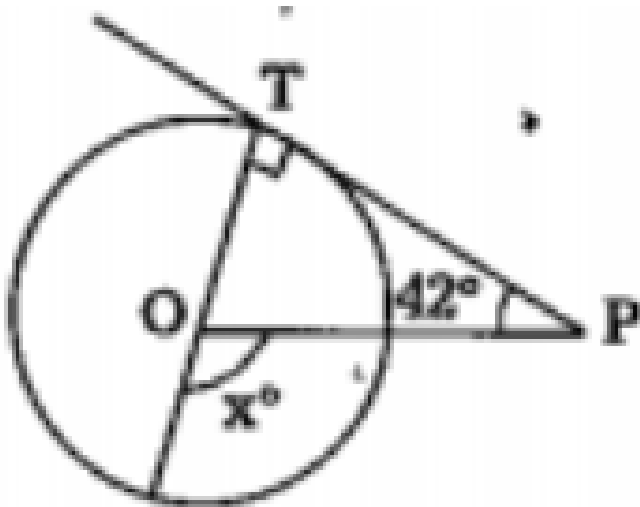
- A. 5 cm , 13 cm
- B. 13 cm , 13 cm
- C. 13 cm , 12 cm
- D. 12 cm , 12 cm

Answer: D



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12. In the figure PT is a tangent to the circle with centre 'O' then $x =$



A. 148°

B. 58°

C. 52°

D. 42°

Answer: D



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13. Angle in a major segment is

A. an obtuse angle

B. an acute angle

C. right angle

D. none

Answer: B



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

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

C. \sqrt{dr}

D. $\sqrt{d + r}$

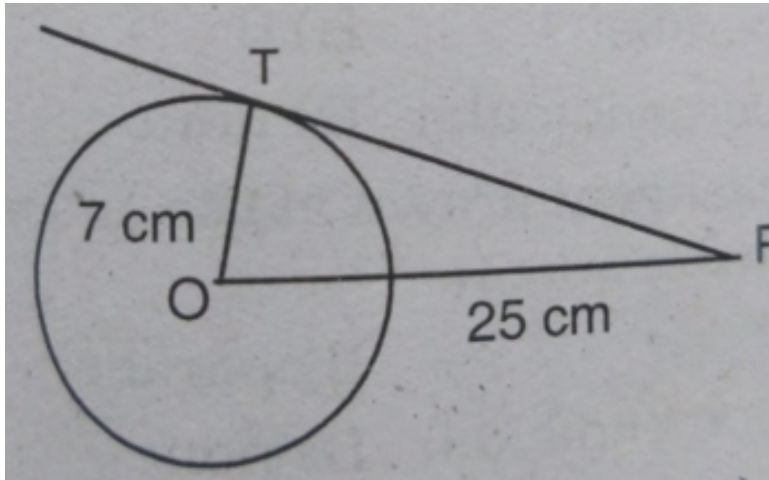
Answer: A



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15. In the figure PT is a 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: C



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16. 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

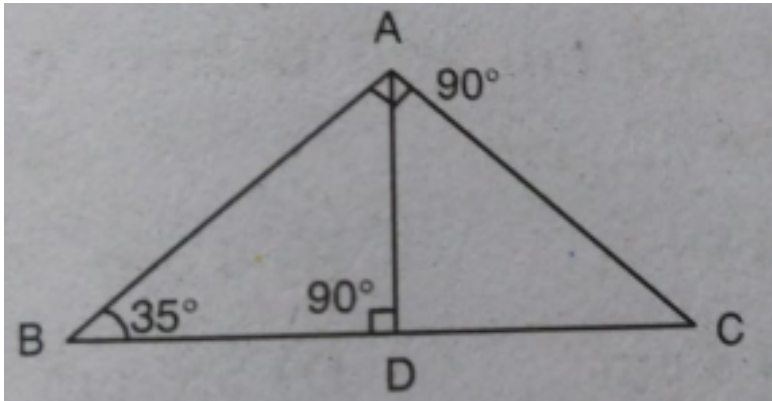
D. 10 cm

Answer: D



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17. From the figure, $\angle DAC$



A. $PS = 2PT$

B. $PT = 2PS$

C. $PS = PT$

D. $PS \neq PT$

Answer: C



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18. 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 $\triangle BCD$ is

A. isosceles

B. equilateral

C. right angled

D. acute angled

Answer: A



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19. 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: B



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20. 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: D



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

A. 16

B. 28

C. 42

D. 56

Answer: B



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22. 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: A



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23. 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: D



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

A. 1 cm

B. 3 cm

C. 5 cm

D. 2 cm

Answer: B



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25. 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: C



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26. Three circles are drawn with the vertices of a triangle as centres such that each circle touches the other two . If the sides of the triangle 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: C



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27. How many tangents can you draw to a circle, which are parallel to each other?

A. 10

B. 12

C. 9

D. 2

Answer: D



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28. A tangent to a circle is a line which The circle exactly at one point .

A. 1

B. 2

C. 3

D. 4

Answer: A



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

A. diameter

B. tangent

C. chord

D. none

Answer: C



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

A. tangent

B. secant

C. circle

D. centre

Answer: B



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

A. point of contact

B. circle

C. tangent

D. none

Answer: A



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

A. 100°

B. 70°

C. 80°

D. 90°

Answer: D



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

.

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

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

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

D. $50\sqrt{2}$

Answer: C



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34. 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: D



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35. The area of a circle that can be inscribed in a square of side 6 cm is

A. 9π

B. 12π

C. 120π

D. none

Answer: A



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

A. 9.5

B. 12.5

C. 10.5

D. 2

Answer: B



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

A. 1

B. 2

C. 3

D. 10

Answer: A



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

A. 1

B. 10

C. 9

D. 2

Answer: D



Watch Video Solution

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

A. No

B. 1

C. 4

D. None

Answer: A



Watch Video Solution

40. A tangent to a circle is a line which The circle exactly at one point .

A. touches

B. 2

C. separates

D. none

Answer: A



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41. 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: B



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

A. parallel

B. 0

C. perpendicular

D. none

Answer: A



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

A. 0

B. parallel

C. perpendicular

D. none

Answer: C



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44. Use Pythagoras theorem and write proof of above theorem " the lengths of tangents

drawn from an external point to a circle are equal . "

A. not equal

B. parallel

C. equal

D. none

Answer: C



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45. A secant meets a circle inpoints .

A. 2

B. 4

C. 3

D. 1

Answer: A



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

A. 10

B. 9

C. 7

D. 1

Answer: D



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47. Sum of the central angles in a circle is

.....

A. 360°

B. 300°

C. 180°

D. 100°

Answer: A



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

A. 100°

B. 180°

C. 200°

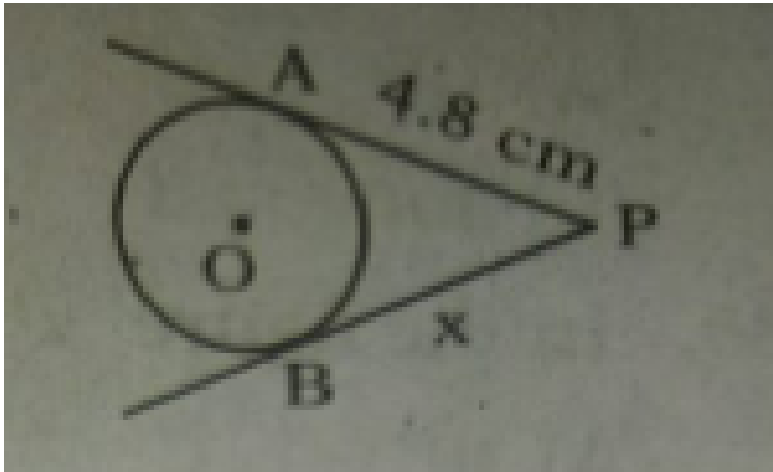
D. 80°

Answer: B



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49. From the figure , $x = \dots\dots\dots$ cm.



A. 8.4

B. 8.8

C. 4.8

D. 4

Answer: C



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

A. 80°

B. 90°

C. 100°

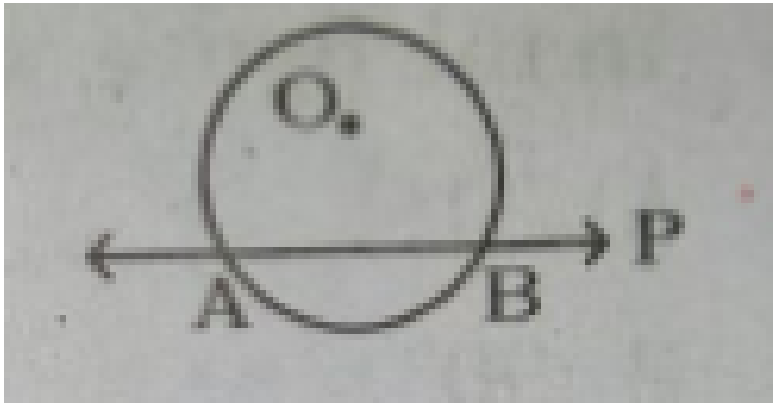
D. 110°

Answer: B



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51. In the figure , P is called



- A. secant
- B. tangent
- C. chord
- D. none

Answer: A



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52. Number of tangents drawn to a circle is

.....

A. 1

B. 4

C. 3

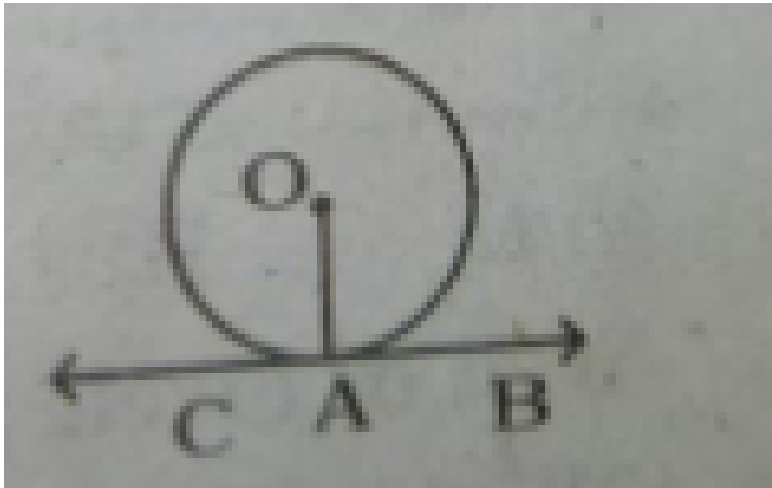
D. infinite

Answer: D



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53. In the figure, $\angle OAB = \dots\dots$



A. 80°

B. 60°

C. 90°

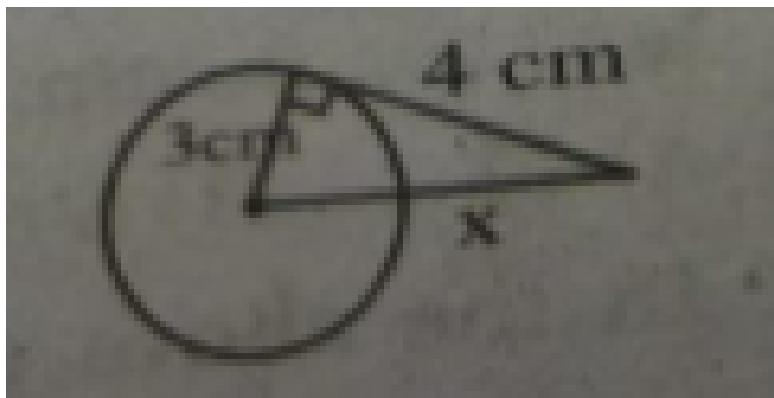
D. 100°

Answer: C



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54. In the figure x , Cm.



A. 5

B. 6

C. 8.2

D. 10

Answer: A



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55. Angle in a minor segment is

A. acute

B. 60°

C. obtuse

D. none

Answer: C



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56. In a circle $d = 10.2$ cm , then $r = \dots\dots\dots$ cm .

A. 4.1

B. 5.1

C. 4.6

D. 5.6

Answer: B



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57. The longest chord in a circle is

A. diameter

B. radius

C. chords

D. none

Answer: A



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58. Circles having saem centre are called

Circles .

A. triangle

B. concentric

C. trapezium

D. none

Answer: B



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59. Circles having saem radii are ..

A. congruent

B. not congruent

C. only similar

D. none

Answer: A



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60. Area of circle is Sq . Units .

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

B. πr^3

C. πr^2

D. $\pi^2 r^2$

Answer: C



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61. Number of chords of a circle is

A. 20

B. 1

C. 211

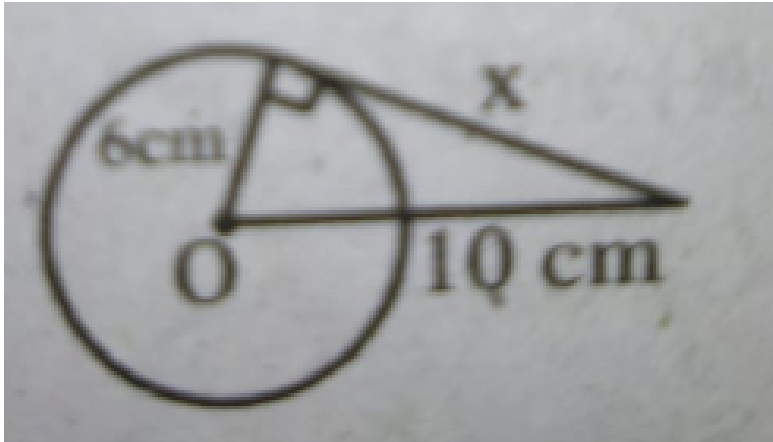
D. infinite

Answer: D



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62. In the figure, $x = \dots\dots$ cm



- A. 1
- B. 9
- C. 8
- D. 10

Answer: C



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63. The shaded portion represents

A. minor segment

B. major segment

C. chord

D. none

Answer: A



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64. Area of semi-circle is

A. πr^2

B. $\pi^2 r$

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

D. πr

Answer: C



Watch Video Solution

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

A. 1

B. 0

C. 9

D. 12

Answer: B



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66. Sum of opposite angles in a cyclic quadrilateral is

A. 100°

B. 180°

C. 190°

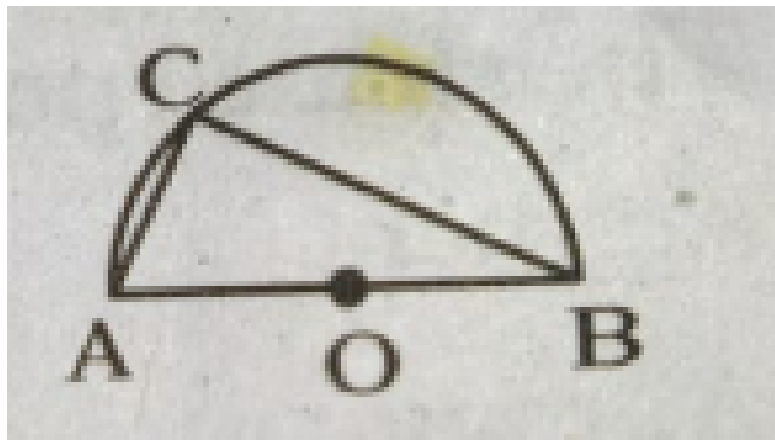
D. 200°

Answer: B



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67. In the figure , $\angle ACB = \dots\dots\dots$



A. 60°

B. 90°

C. 70°

D. 110°

Answer: B





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68. Cyclic rhombus is a

A. Square

B. parallelogram

C. triangle

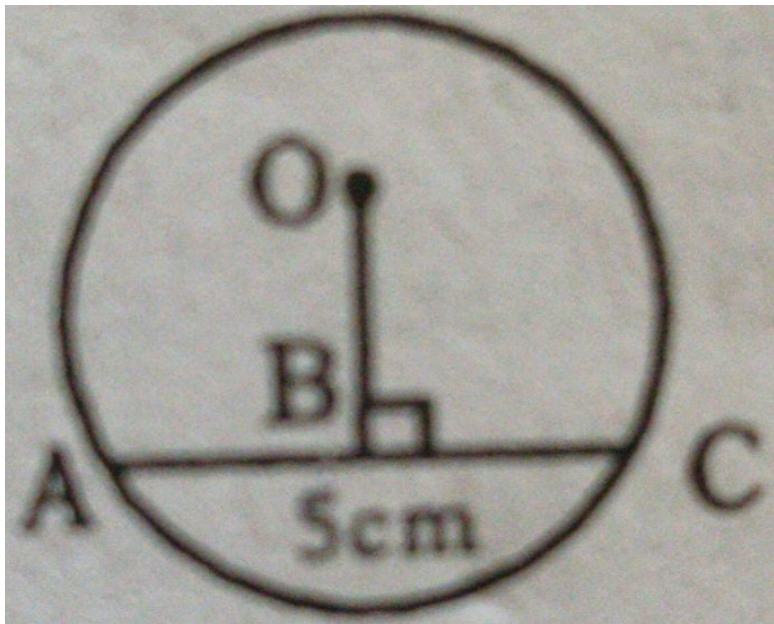
D. none

Answer: A



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69. In the figure , $BC = \dots\dots\dots\text{cm}$.



A. 1.4

B. 2.3

C. 0.5

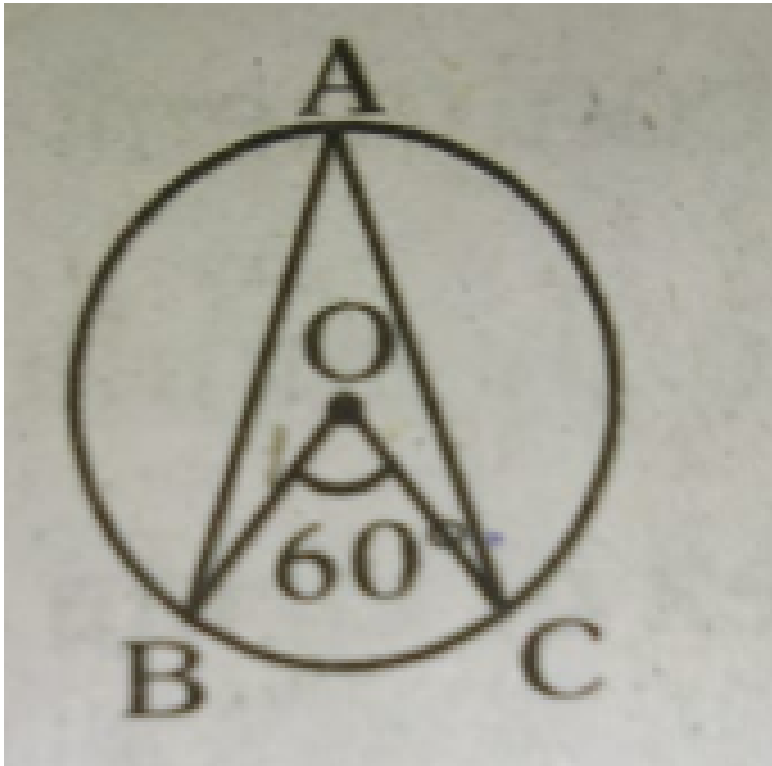
D. 2.5

Answer: D



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70. In the figure, $\angle BAC = \dots\dots$



A. 90°

B. 70°

C. 30°

D. none

Answer: C



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71. 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: A



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72. Area of ring =

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

B. $\pi(R - r)$

C. $R^2 - r^2$

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

Answer: A



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73. Side of a square is 4 cm , then A=

cm^2

A. 64

B. 12

C. 16

D. 20

Answer: C



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74. Diameter of a circle passes through

A. equal

B. point

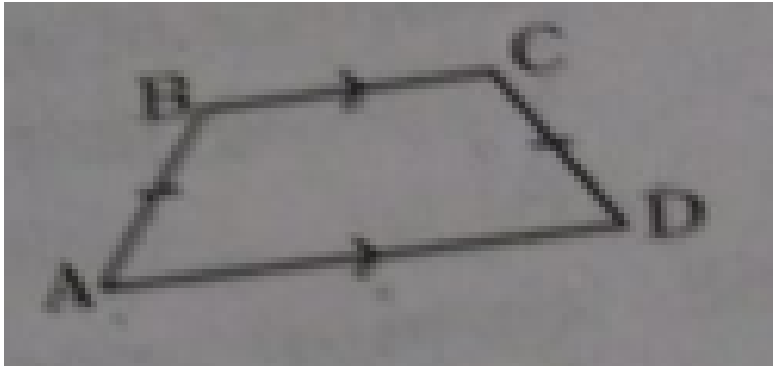
C. centre

D. none

Answer: C

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75. The below figure represents



A. Trapezium

B. rectangle

C. triangle

D. none

Answer: A



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76. ABCD is a cyclic quadrilateral then

$$\angle A + \angle C = \dots\dots\dots$$

A. 100°

B. 120°

C. 109°

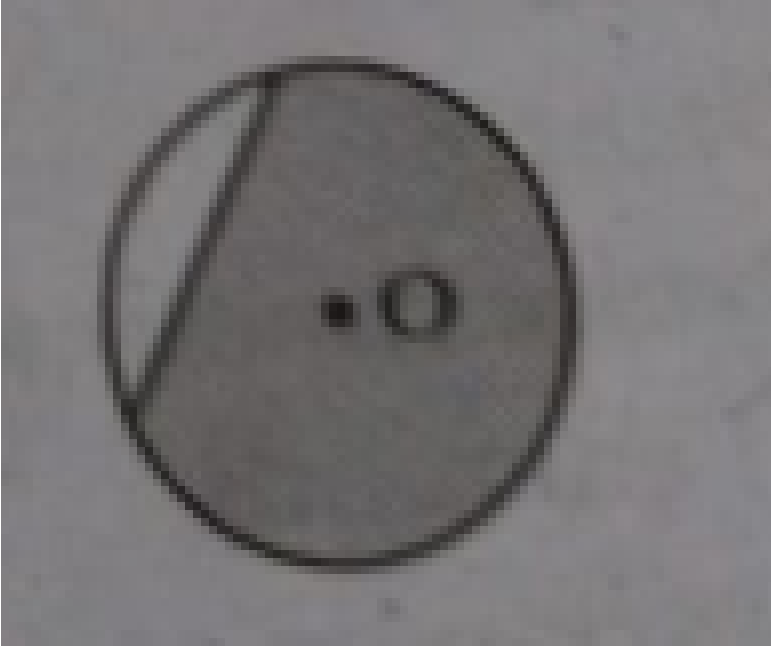
D. 180°

Answer: D



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77. The shaded portion represents
.....segment



A. major

B. minor

C. acute

D. none

Answer: A



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78. Which of the following is a semicircle ?

A. 

B. 

C. 

D. all

Answer: A



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79. Angle in the same segment of the circle

.....

A. 30°

B. equal

C. not equal

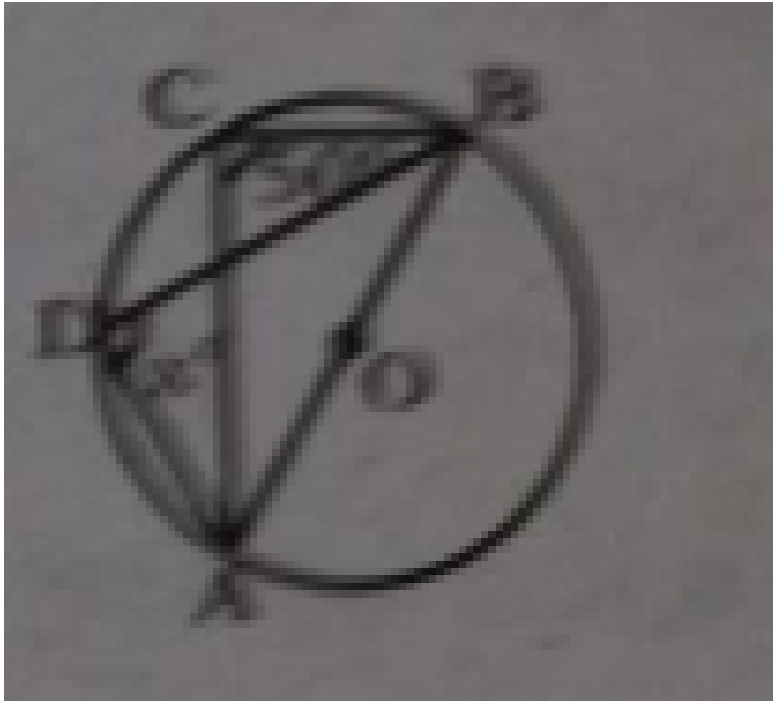
D. none

Answer: B



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80. In the figure , $x^\circ = \dots\dots\dots$



A. 30°

B. 110°

C. 60°

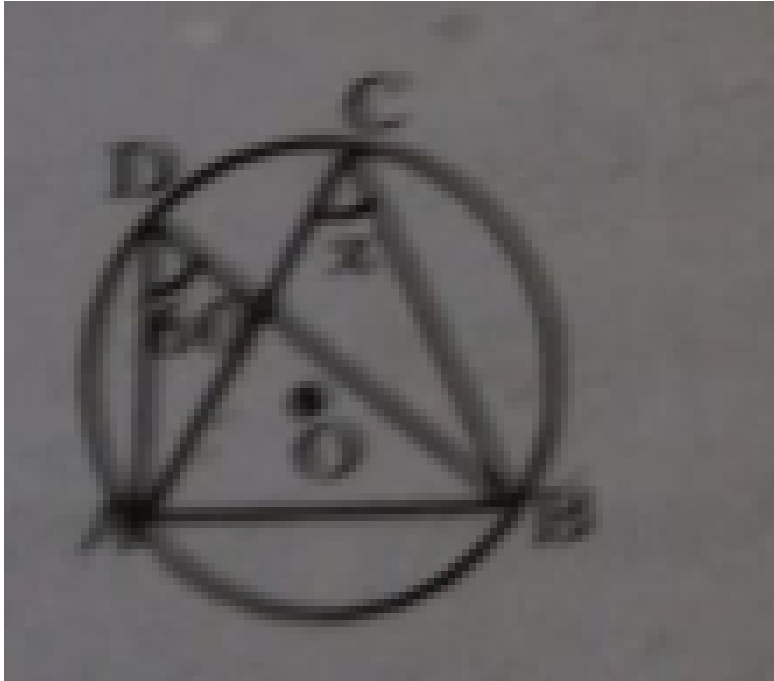
D. none

Answer: D



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81. In the figure $x = \dots\dots\dots$



A. 20°

B. 90°

C. 60°

D. 80°

Answer: C



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82. Area of triangle =sq. units .

A. bh

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

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

D. none

Answer: B



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

A. 6

B. 12

C. 10

D. 9

Answer: D



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84. Area of circle with radius $r = \dots\dots cm^2$

A. πr^4

B. πr

C. πr^2

D. $\pi / 2$

Answer: C



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

A. 12

B. 6

C. 8

D. 7

Answer: D



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86. In the above problem height= ___ cm.

A. 19

B. 16

C. 28

D. none

Answer: C



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87. Angle made by minute hand in 1 m =

A. 6°

B. 12°

C. 10°

D. none

Answer: A



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

A. 100.6

B. 102.66

C. 811.6

D. none

Answer: B



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

D. none

Answer: A



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90. Parallelogram circumscribing a circle is a

.....

A. parallelogram

B. rhombus

C. circle

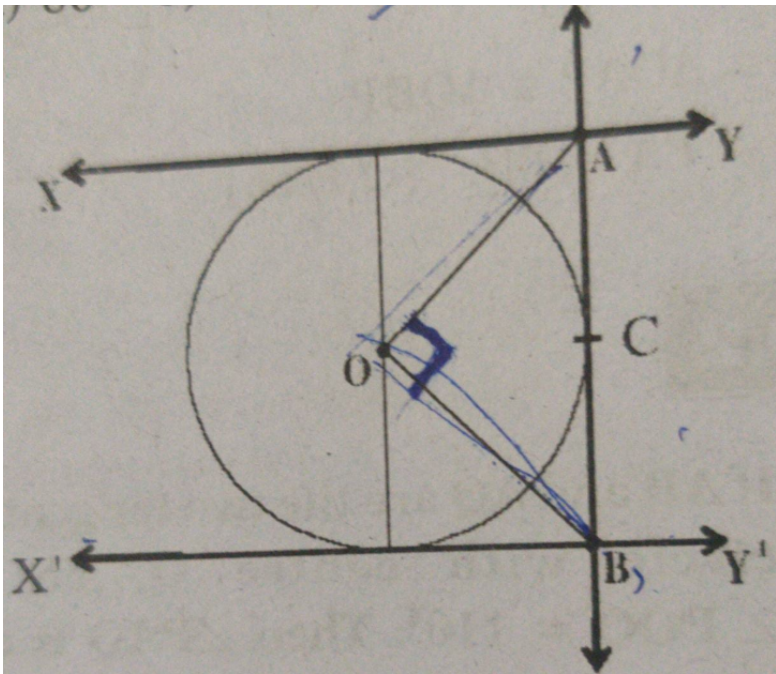
D. none

Answer: B



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91. In the figure XY and $X'Y'$ are two parallel tangents to a circle with centre O and another tangent AB with point of contact C intersecting XY at A and $X'Y'$ at B then 'angle



$\angle AOB =$

A. 75°

B. 95°

C. 70°

D. 90°

Answer: D



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

A. 70°

B. 60°

C. 90°

D. 75°

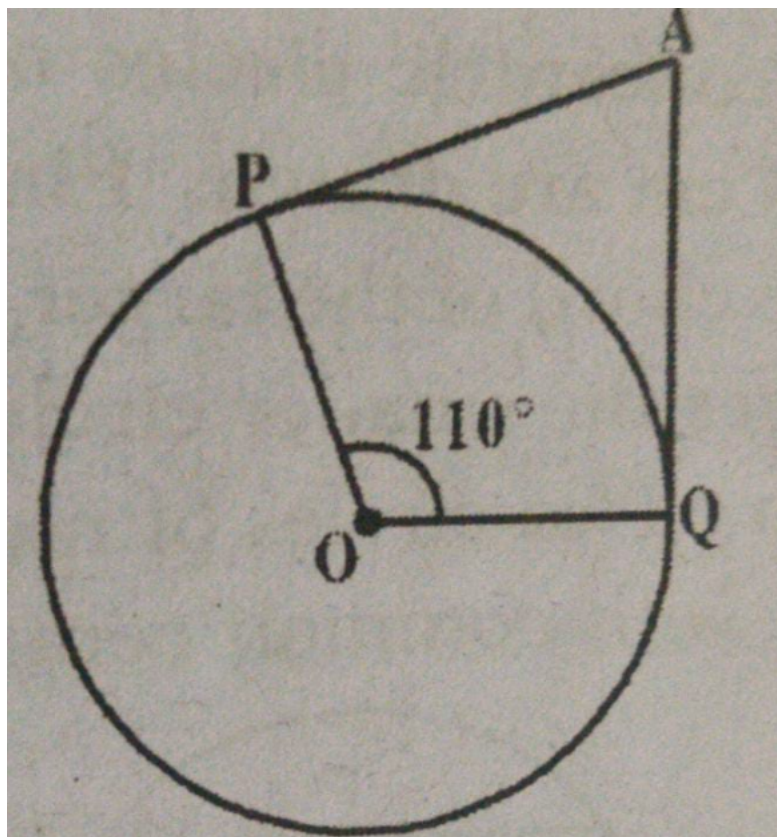
Answer: C



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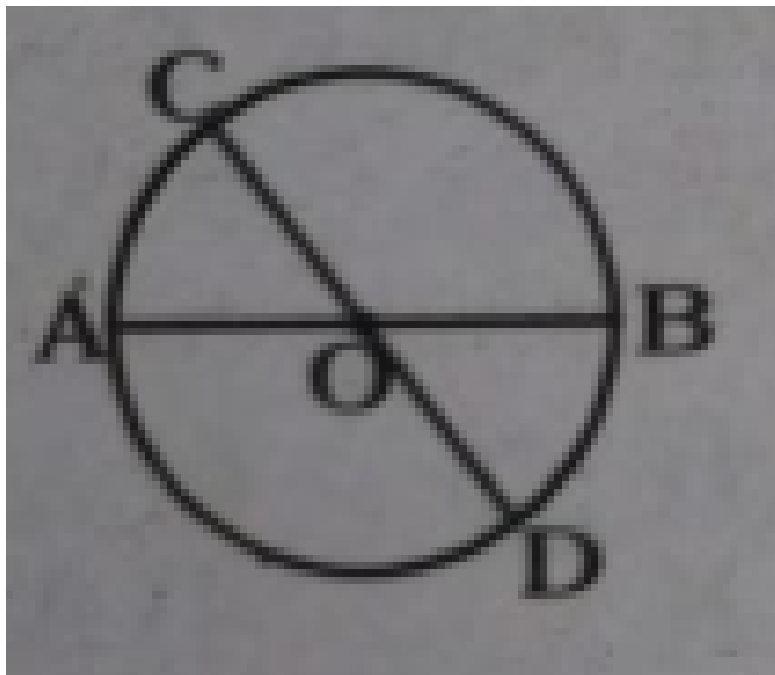
93. If AP and AQ are the two tangents a circle with centre O , so that

$\angle POQ = 110^\circ$, Then $\angle PAQ$ is equal to



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94. In the figure $AB = 6.2\text{cm}$ then $CD = \dots\dots\dots$
cm .



A. 5.2

B. 6.2

C. 8.2

D. none

Answer: B



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95. Area of circle in terms of diameter is

A. $\frac{\pi d^2}{4}$

B. πr^2

C. $\frac{\pi d^2}{14}$

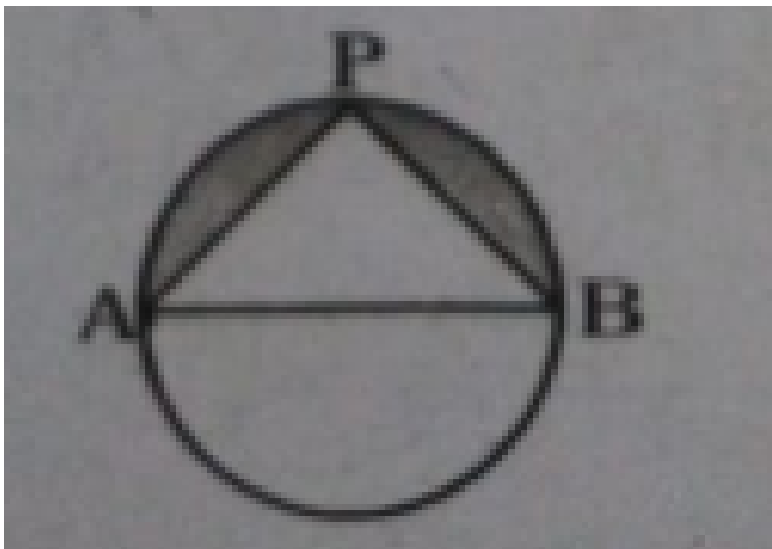
D. all

Answer: A



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96. 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: C



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97. 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: B



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98. Angle described by hour hand in 12 hours
is

A. 90°

B. 200°

C. 360°

D. 180°

Answer: C



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99. Each angle in a square is

A. 85°

B. right angle

C. 60°

D. 70°

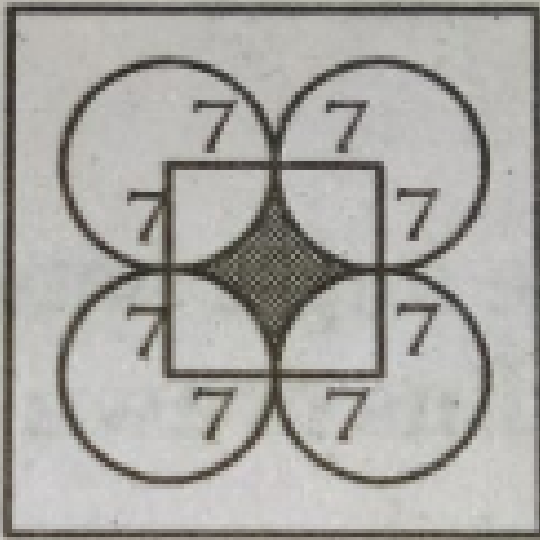
Answer: B



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100. In the figure , the area of shaded region is

..... cm^2 .



A. 74

B. 60

C. 82

D. 42

Answer: D



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101. Perimeter of semicircle is Units .

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

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

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

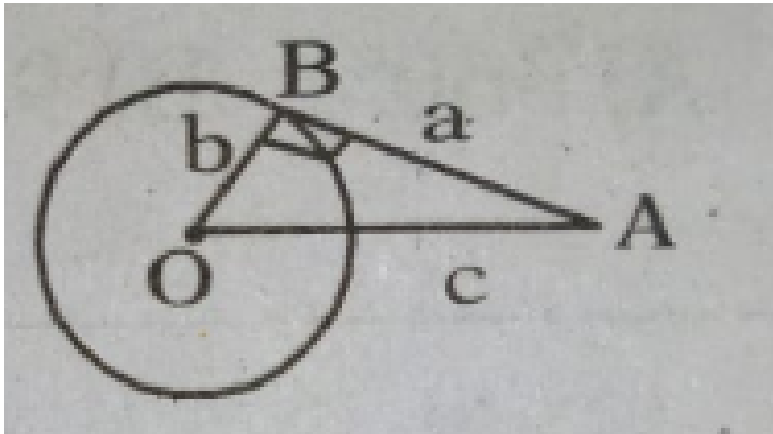
D. none

Answer: A



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

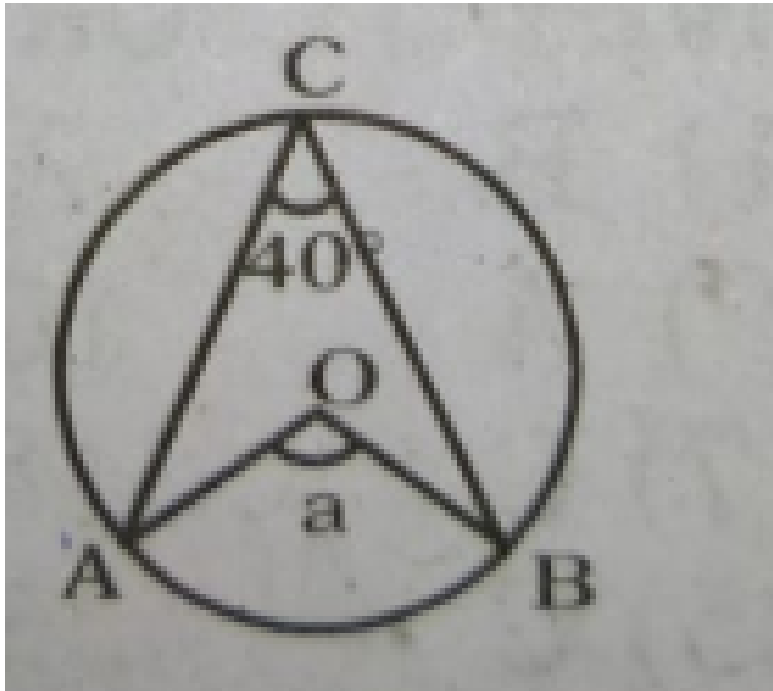
D. all

Answer: A



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103. In the figure , $a = \dots\dots\dots$



A. 100°

B. 170°

C. 80°

D. 90°

Answer: C



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104. Perimeter of sectors =

A. $l + 2r$

B. $l - r$

C. $l - 2r$

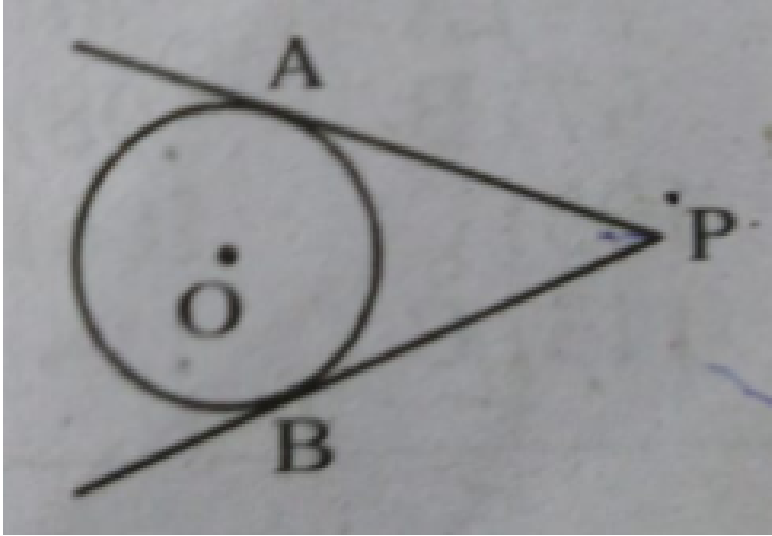
D. none

Answer: A



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105. What do you observe from the below figure ?



A. $PA < PB$

B. $PA > PB$

C. $PA = PB$

D. none

Answer: C



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

A. 5

B. 4

C. 9

D. none

Answer: B



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