

CLASS X – MATHEMATICS – CHAPTER 11

AREA RELATED TO CIRCLE

Name:

Date:

CHOOSE THE CORRECT OPTION FROM QUES 1 TO 12

- Q01.** The circumference of a circular field is 528cm. Then its radius is
(a) 42cm (b) 84cm (c) 72cm (d) 56cm
- Q02.** The circumference of a circle exceeds its diameter by 180cm. Then its radius is
(a) 32cm (b) 36cm (c) 40cm (d) 42cm
- Q03.** Area of the sector of angle 60° of a circle with radius 10cm is
(a) 1097cm^2 (b) 1100cm^2 (c) 1096cm^2 (d) None of there
- Q04.** Area of a sector of angle P of a circle with radius R is
(a) $P2\pi R/180$ (b) $P2\pi R^2/180$ (c) $P2\pi R/360$ (d) $P2\pi R^2/720$
- Q05.** If the sum of the circumferences of two circles with radii R_1 and R_2 is equal to the circumference of a circle of Radius R_1 then
(a) $R_1 + R_2 = R$ (b) $R_1 + R_2 = R$ (c) $R_1 + R_2 = R$ (d) None of these
- Q06.** If the perimeter of a circle is equal to that of a square, then the ratio of their area is
(a) 22 : 7 (b) 14 : 11 (c) 7 : 22 (d) 11 : 14
- Q07.** The circumference of a circular field is 528cm. Then its radius is
(a) 42cm (b) 84cm (c) 72cm (d) 56cm
- Q08.** If the perimeter of a circle is equal to that of a square, then the ratio of their area is
(a) 22:7 (b) 14:11 (c) 7:22 (d) 11:14
- Q09.** The area of a circle is 394.24cm^2 . Then the radius of the circle is
(a) 11.4cm (b) 11.3cm (c) 11.2cm (d) 11.1cm
- Q10.** If the perimeter and area of circle are numerically equal, then the radius of the circle is
(a) 2 units (b) π units (c) 4 units (d) 7 units
- Q11.** The radius of a circle is $\frac{7}{\sqrt{\pi}}$ cm then the area of the circle is
(a) 154 cm^2 (b) 49 cm^2 (c) 22 cm^2 (d) 49 cm^2
- Q12.** The circumference a circle is 528cm. Then its area is
(a) $22,176\text{ cm}^2$ (b) $22,576\text{ cm}^2$ (c) $23,176\text{ cm}^2$ (d) $24,576\text{ cm}^2$

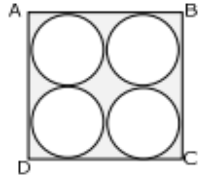
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Q01. Find the circumference of a circle of diameter 14cm.

Q02. The diameter of a circular pond is 17.5m. It is surrounded by a path of width 3.5m.

Find the area of the path.

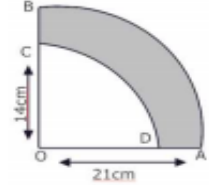
Q03. Find the area of the shaded region where ABCD is a square of side 14cm.



Q04. The radius of a circle is 20cm. Three more concentric circles are drawn

inside it in such a manner that it is divided into four parts of equal area.

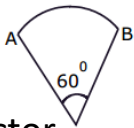
Find the radius of the largest of the three concentric circle



Q05. The cost of fencing a circular field at the rate of Rs24 per metre is Rs 5280. The field is to be ploughed at the rate of Rs.0.50per m^2 . Find the cost of ploughing the field. [$\pi = 22/7$]

Q06. ABCD is a flower bed If $OA = 21m$ and $DC = 14m$. Find the area of the bed.

Q07. A wheel has diameter 84cm. find how many complete revolutions it must make to cones 792 meters.

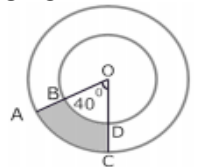


Q08. The given figure is a sector of a circle of radius 10.5cm. Find the perimeter of the sector.

Q09. The radii of two circles are 19cm and 9cm respectively. Find the radius of the circle which has its circumference equal to the sum of the circumference of the two circles.

Q10. A car travels 0.99km distance in which each wheel makes 450 complete revolutions.

Find the radius of its wheel.



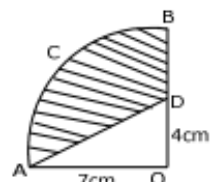
Q11. Find the area of a sector of a circle with radius 6cm. if angle of the sector is 60°

Q12. Find the area of the shaded region of the two concentric circles with centre O are 7cm and 14cm respectively and $\angle AOC = 40^\circ$.

Q13. The cost of fencing a circular field at the rate of Rs. 24 per metre is Rs. 5280. The field is to be ploughed at the rate of Rs. 0.50 Per m^2 . Find the cast of ploughing the field.

Q14. The length of the minute hand of a clock is 14cm.Find the area swept by the minute hand in 5 minutes.

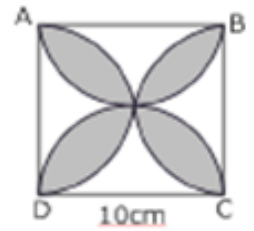
Q15. OACB is a quadrant of a circle with centre O and radius 7 cm it $OD = 4cm$, then find area of shaded region.



Q16. A pendulum swings through on angle of 30° and describes an arc 8.8cm in length. Find the length of pendulum.

Q17. Find the area of shaded region in the given figure where ABCD is a square of side 10cm and semi-circles are drawn with each side of square as diameter. [$\pi = 3.14$]

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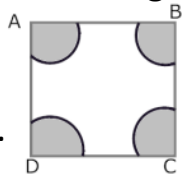


Q18. The perimeter of a sector of a circle of radius 5.7m is 27.2m calculate.

(i) The length of arc of the sector in cm.

(ii) The area of the sector in cm^2 correct to the nearest cm^2

Q19. The radii of two circles are 8cm and 6cm respectively. Find the radius of the circle having its area equal to the sum of the areas of the two circles.



Q20. Find the area of a sector of a circle with radius 6cm if angle of the sector is 60° .

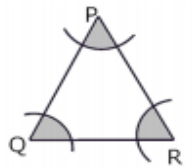
Q21. In the given Fig. areas have been drawn of radius 21cm each with vertices A, B, C and D of quadrilateral ABCD as centres. Find the area of the shaded region.

Q22. A chord of a circle of radius 10cm subtends a right angle at the centre. Find the area of the corresponding: ($\pi = 3.14$)

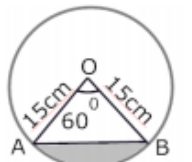
(i) minor sector (ii) major sector (iii) minor segment (iv) major segment

Q23. A car had two wipers which do not overlap. Each wiper has a blade of length 25cm sweeping through an angle of 115° . Find the total area cleaned at each sweep of the blades

Q24. In the given Fig arcs have been drawn with radii 14 cm each and with centres P, Q and R. Find the area of the shaped region.

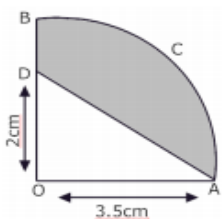


Q25. In Akshita's house there is a flower pot. The sum of radii of circular top and bottom of a Flower pot is 140cm on and the difference of their circumference is 88cm. Find the diameter of the circular top and bottom.



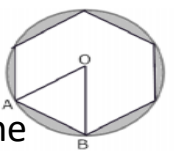
Q26. A chord of a circle of radius 15cm subtends an angle of 60° at the centre. Find the area of the corresponding minor and major segments of the circle.

Q27. A sector is cut from a circle of diameter 21cm. if the angle of the sector is 150° Find its area.



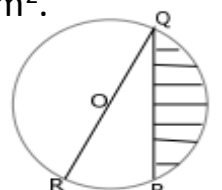
Q28. In the given figure AOBCA represent a quadrant of area 9.625 cm^2 . Calculate the area of the shaded portion.

Q29. The length of the minute hand of clock is 14cm. Find the area swept by the minute hand is 5 minutes.



Q30. A round table cover has six equal designs as shown is the figure. If the radius of the cover is 28cm. find the cost of making the design at the rate of Rs.0.35 per cm^2 .

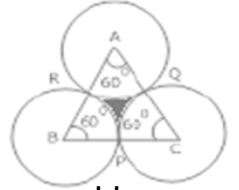
Q31. Find the area of the shaded region if $PQ = 24\text{cm}$ $PR = 7\text{cm}$ and O is the centre of the circle.



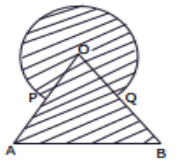
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Q32. An umbrella has 8 ribs which are equally spaced as given in the figure. Assuming umbrella to be a flat circle of radius 45cm. find the area between two consecutive ribs of the umbrella.

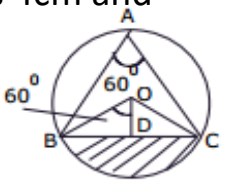
Q33. The area of an equilateral ΔABC is 1732.5cm^2 with each centre of the triangle as vertex a circle is drawn with radius equal to half the length of the side of triangle. Find the area of the shaded region.



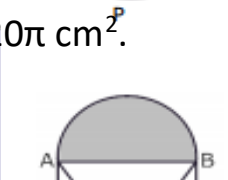
Q34. Three horses are tethered with 7m long ropes at the three corners of a triangle field having sides 20m, 34m. Find the area of the plot which can be grazed by the horses. Also find the area of the plot which remains ungrazed.



Q35. Find the area of the shaded region where a circular arc of radius 6cm has been drawn with vertex O of an equilateral triangle OAB of side 12cm as centre.

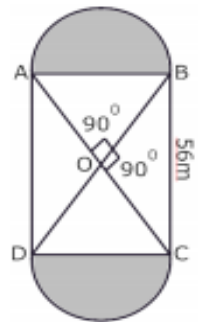


Q36. In the given figure ΔABC is an equilateral triangle inscribed in a circle of radius 4cm and centre O. Show that the area of the shaded region is $[\frac{4}{3}(4\pi - 3\sqrt{3})\text{cm}^2]$.



Q37. An arc of a circle is of length 5π cm and the sector is bounded by an area of 20π cm². Find the radius of the circle.

Q38. In given figure two circular flower beds have been shown on two sides of a square lawn ABCD of side 56m. If the corner of each circular flower bed is the point of intersection O of the diagonals of the square lawn. Find the sum of the areas of the lawn and the flower beds.



Q39. Find the difference between the area of regular hexagonal plot each of whose side 72m and the area of the circular swimming tank inscribed in it. $[\pi = \frac{22}{7}]$