MATHS

BOOKS - OSWAAL PUBLICATION

MATHS (KANNADA ENGLISH)

AREAS RELATED TO CIRCLES

Very Short Answer Type Questions

1. What is the perimeter of the sector with radius of 10.5 cm and sector angle 60° ?

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2. If the circumferences of two concentric circles forming a ring are 88 cm and 66 cm respectively. Find the width of the ring.

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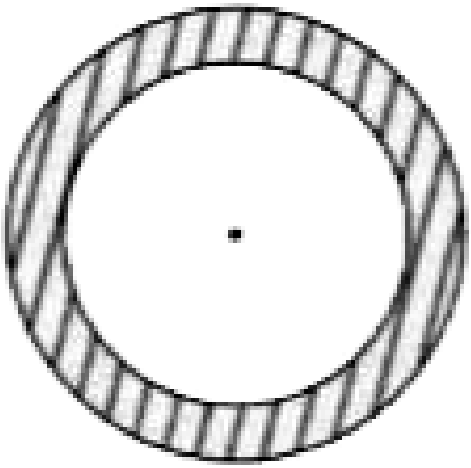
3. Two coins of diameter 2 cm and 4 cm respectively are kept one over the other as shown in the figure, find the area of the

shaded ring shaped region in square cm.



Area of circle = πr^2

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4. The diameters of two circles with centre A and B are 16 cm and 30 cm respectively. If area of another circle with centre C is equal to the

sum of areas of these two circles, then find the circumference of the circle with centre C.

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5. The diameter of a wheel is 1.26 m. What the distance covered in 500 revolutions?

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6. What is the area of the largest square that can be inscribed in a circle of radius 12 cm?

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7. What is the name of a line which intersects a circle at two distinct points?

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8. What is the perimeter of a sector of a circle whose central angle is 90° and radius is 7 cm ?

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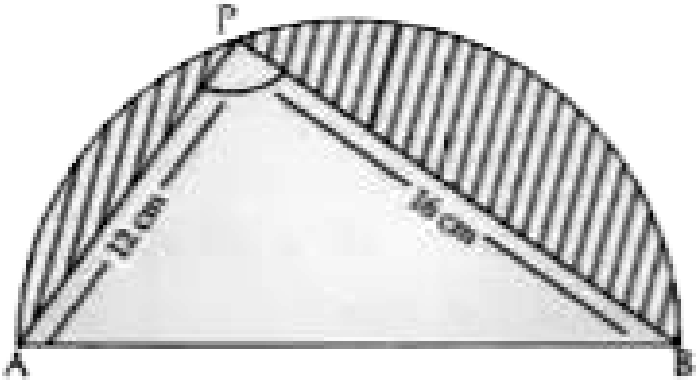
9. In the given figure, AB is the diameter where AP=12 cm and PB=16 cm. Taking the value of π as 3 , find the perimeter of the shaded region.



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10. Find the area of circle that can be inscribed in a square of square of side 10 cm .

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11. A thin wire is in the shape of a circle of radius 77 cm. It is bent into a square. Find the side of the square (Taking , $\pi = \frac{22}{7}$)

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12. What is the diameter of a circle whose area is equal to the sum of the areas of two circles of radii 40 cm and 9 cm ?

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13. Find the area (in cm^2) of the circle that can be inscribed in a square of side 8 cm.

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14. If the radius of a circle is doubled, what about its area ?

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15. If the perimeter and area of a circle are numerically equal, then find the radius of the circle.

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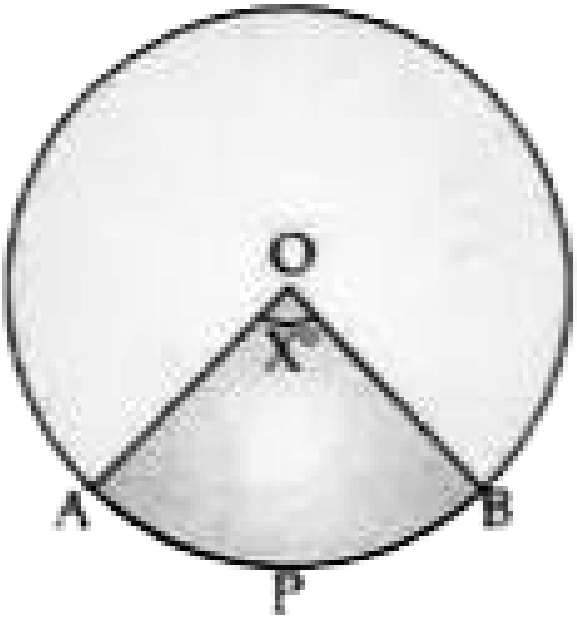
16. In given fig, O is the centre of a circle. If the area of the sector OAPB is $\frac{5}{36}$ times the area of the cicle, then find the value of x.



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17. If circumference of a circle is 44 cm, then what will be the area of the circle ?

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18. A steel wire when bent in the form of a square encloses an area of 121 cm. If the same wire is bent in the form of a circle, then find the circumference of the circle .

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19. Find the radius of a circle whose circumference is equal to the sum of the circumference of two circles of diameter 36 cm and 20 cm.

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20. Find the diameter of a circle whose area is equa to the sum of areas of two circles of diameter 16 cm and 12 cm.

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21. If the circumference of a circle increases from 4π to 8π, then what about its area ?

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22. the difference between the circumference and the radius of a circle is 37 cm. then using $\pi = \frac{22}{7}$ find the circumference (in cm) of the circle .

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Short Answer Type Questions

1. Find the area of the square that can be inscribed in a circle of radius 8 cm.

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2. A paper is in the form of a rectangle ABCD in which AB = 20 cm , BC = 14 cm . A semi-circular portion with BC as diameter is cut off. Find the area of the remaining part $\left(\text{Use } \pi = \frac{22}{7}\right)$

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3. If the radius of the circle is 6 cm and the length of an arc is 12 cm. Find the area of the sector.

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4. Two circular pieces of equal radii and maximum areas, touching each other are cut out from a rectangular cardboard of dimensions 14 cm $\times$ 7 cm . Find the area of

the remaining carboard.

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

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5. If the perimeter of a semi-circular protractor is 36 cm, find its diameter. $\left(\text{Use } \pi = \frac{22}{7}\right)$

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6. If the perimeter of a protractor is 72 cm, calculate its area. $\left(\text{use } \pi = \frac{22}{7}\right)$

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7. A chord of a circle of radius 10 cm subtends a right angle at the centre. Find area of minor segment.

$(\text{use} \quad \pi = 3.14)$

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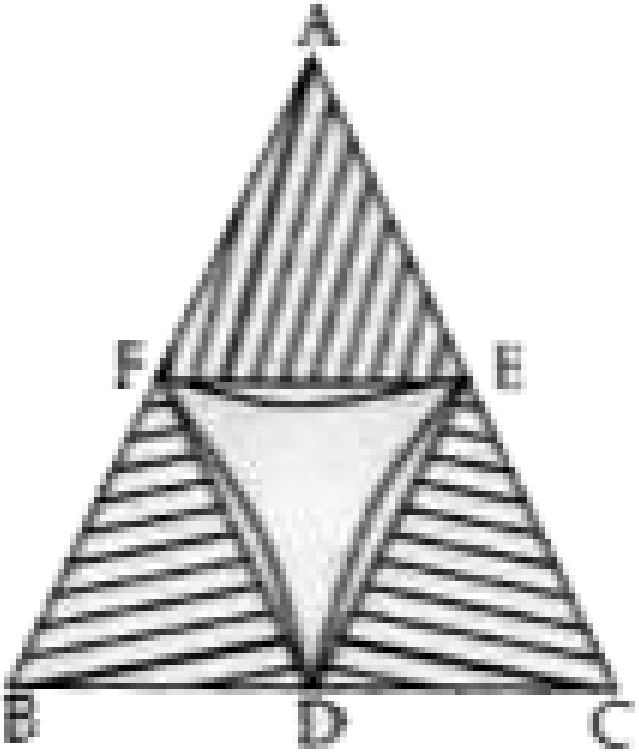
8. In fig, arcs are drawn by taking vertices A, B and C of an equilateral triangle of side 10 cm,

to intersect the sides BC, CA and AB at their respective mid-points D, E and F. Find the area of the shaded region. $(\text{Use } \pi = 3.14)$.



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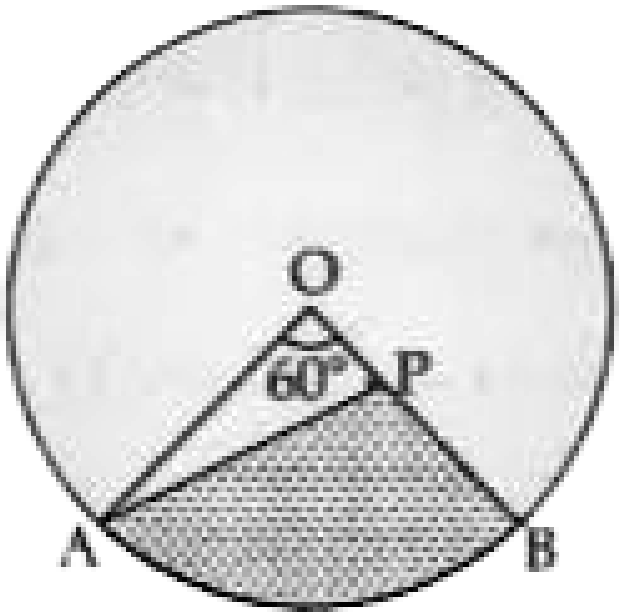
Long Answer Type Questions I

1. In the given figure, AOB is a sector of angle 60° of a circle with centre O and radius 17 cm . If AP $\perp$ OB and AP = 15 cm find the area of the shaded region.



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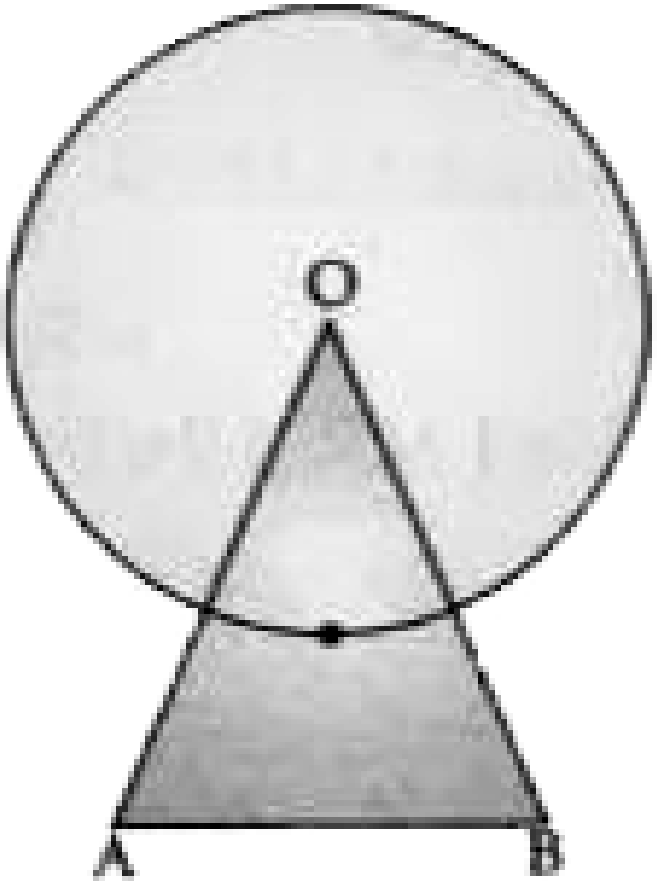
2. Find the area of shaded region shown in the given figure where a circular arc of radius 6 cmn has been drawn with vertex O of an equilateral triangle OAB of side 12 cm as

centre.



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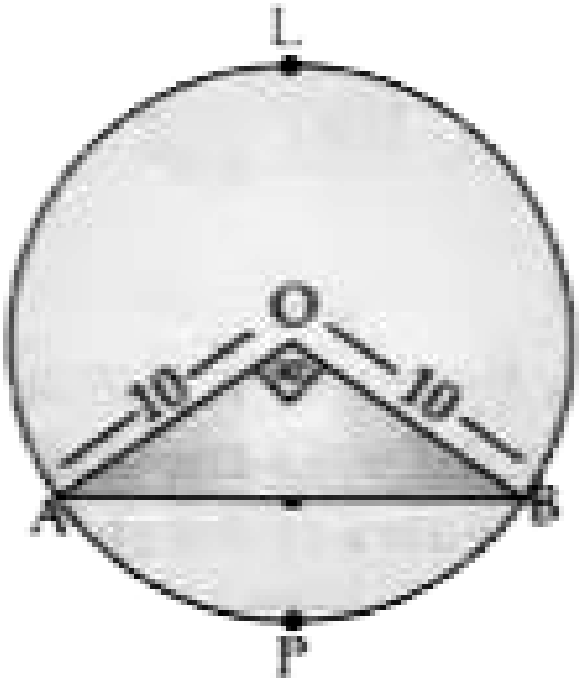
3. In the given figure, a chord AB of the circle with centre O and radius 10 cm, that subtends a right angle at the centre of the circle. Find the area of the minor segment AQBP. Hence find the area of major segment A∠lBQA.



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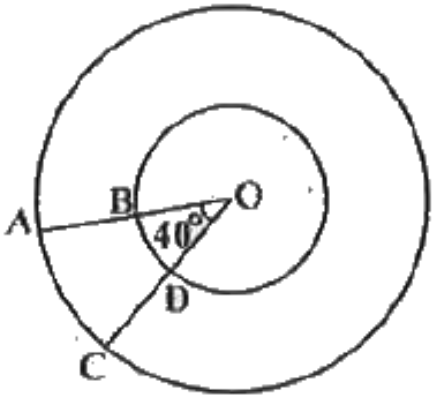
4. Find the area of the shaded region in Fig., if radii of the two conecntric circles with centrre O are 7 cm and 14 cm respectively and $\angle AOC = 40^\circ$.



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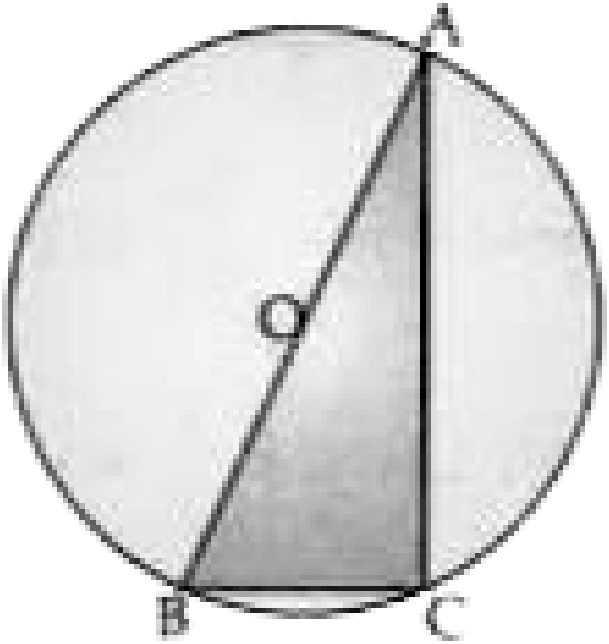
5. In the given figure, O is the centre of circle such that diameter AB = 13 cm and AC 12 cm. BC is joined. Find the area of the shaded region. (π = 314)



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6. Find the area of minor segment of a circle of radius 14 cm, when its centre angle is 60° . Also find the area of corresponding major segment.

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

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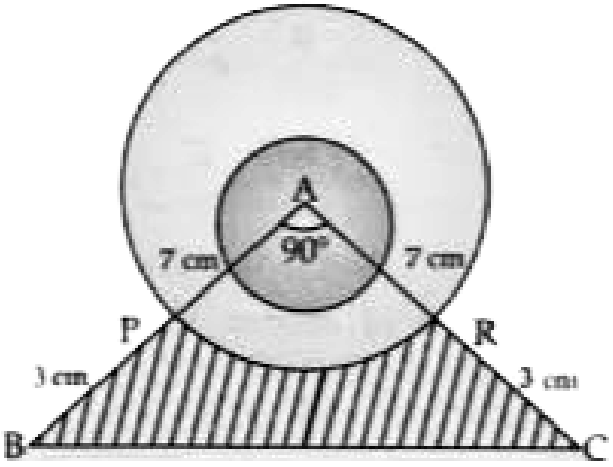
7. A momento is made as shown in the figure. Its base PBCR is silver plated from the front side. Find the area which is silver plated.

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



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8. The circumference of a circle exceeds the diameter by 16.8 cm. Find the radius of the circle.

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

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9. Find the area of the corresponding major sector of a circle of radius 28 cm and the central angle 45° .

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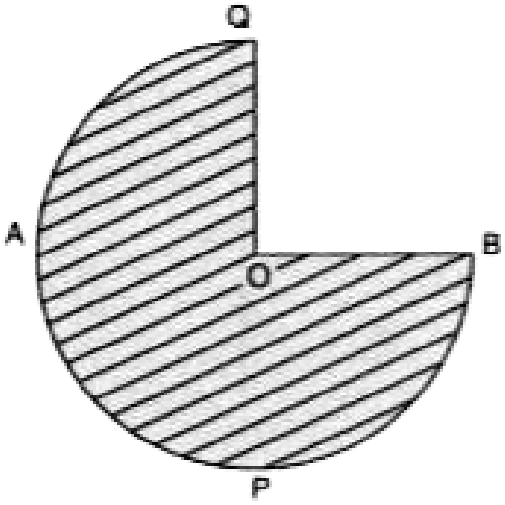
10. In fig., APB and AQP are semi-circles, and AO = OB if the perimeter of the figure is 47 cm, find the area of the shaded region (use

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



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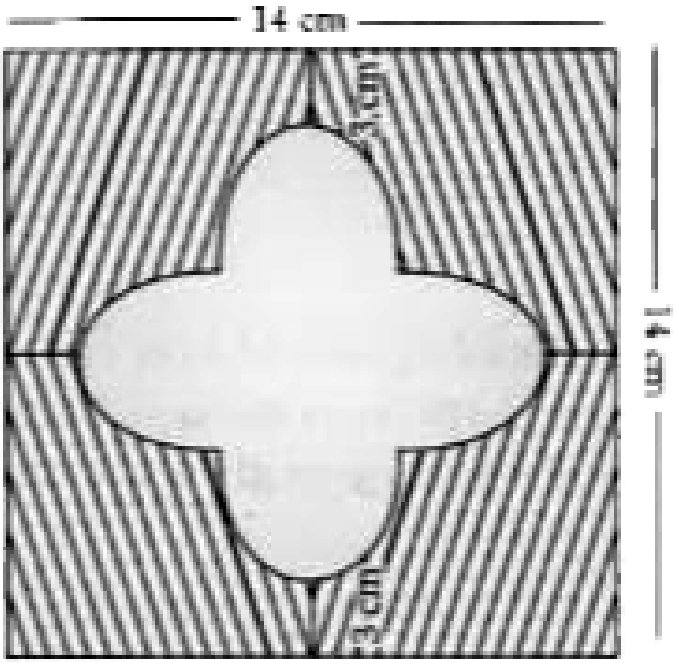
11. in fig. find the area of the shaded region [

use π = 3.14]



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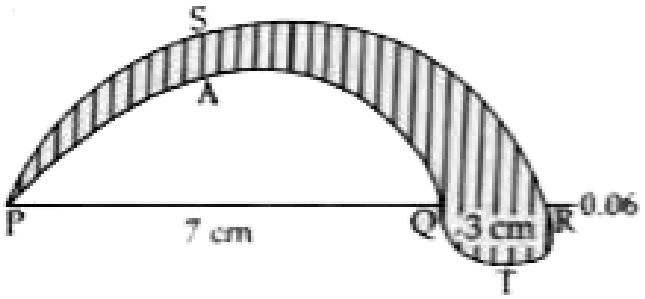
12. In the fig, PSR, RTQ and PAQ are three semi circles of diameters 10 cm, 3 cm and 7 cm respectively. Find the perimeter of shaded

region. $\left(\text{Use } \pi = \frac{22}{7}\right)$.



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13. In the figure, Δ ABC is in the semi-circle, find the area of the shaded region given that AB = BC =4 cm $(\text{use } \pi = 3.14)$

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14. In the figure, Δ ABC is in the semi-circle, find the area of the shaded region given that AB = BC =4 cm.

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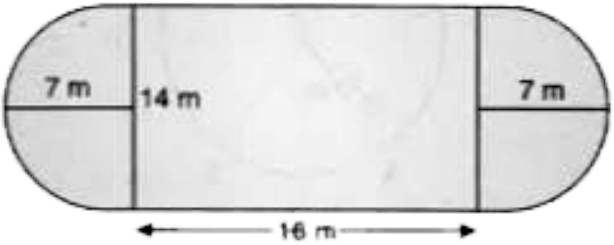
15. Find the area of the adjoining diagram.



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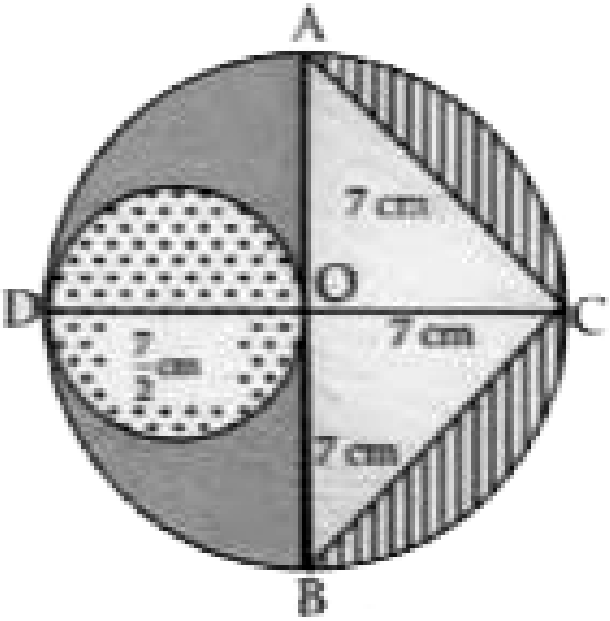
16. AB and CD are two diameters of a circle perpendicular to each other and OD is the diameter of the smaller circle. If OA = 7 cm, find the area of the shaded region.



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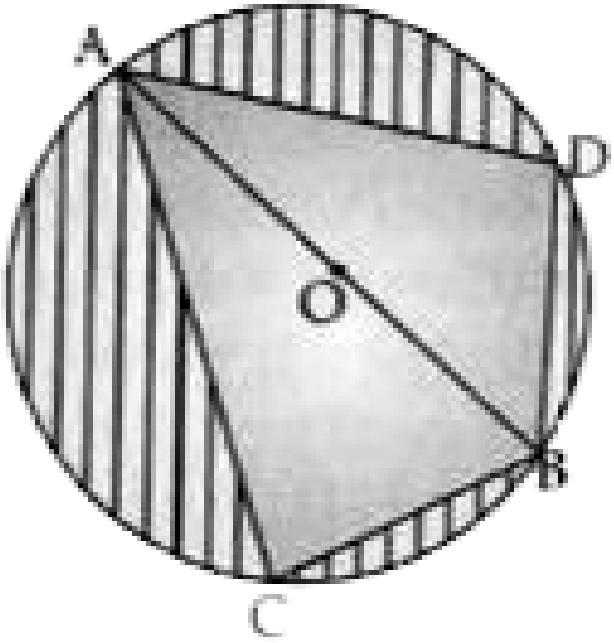
17. Find the area of the shaded region in figure, if BC BD=8cm, AC = AD = 15 cm and O is the centre of the circle. $(\text{Take } \pi = 3.14)$



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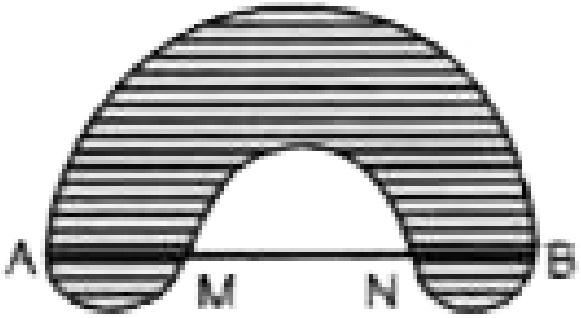
18. In the given figure, AB is the diameter of the largest semi-circle. AB =21 cm, AM = MN = NB. Semi-circles are drawn with AM, MN and NB as shown. Using $\pi = \frac{22}{7}$, calculate the area of the shaded region.



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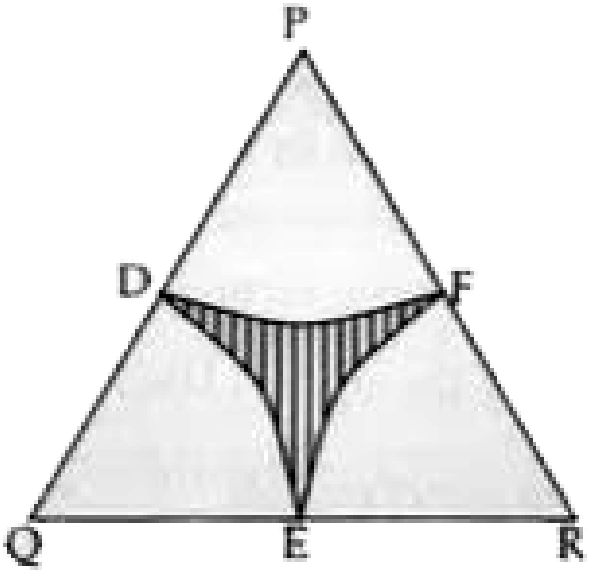
19. In the given figure, Δ POR is an equilateral triangle of side 8 cm and D, E, F are centres of circular arcs, each of radius 4 cm. Find the area r shaded region. (Use π = 3.14 and $\sqrt{3}$ = 1.732)



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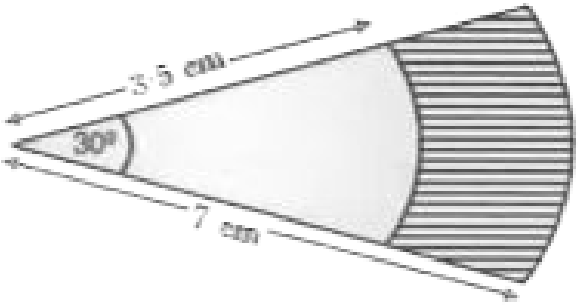
20. In fig., sectors of two concentric circles of radii 7 cm and 3.5 cm are given. Find the area of shaded region. $\left(\text{Use } \pi = \frac{22}{7}\right)$



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