



INDIAN SCHOOL AL WADI AL KABIR

Department: Mathematics

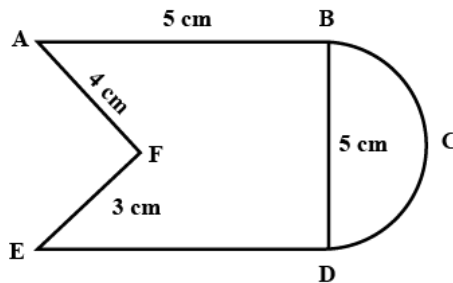
Class X

Worksheet – AREAS RELATED TO CIRCLES

Questions of 2 marks each

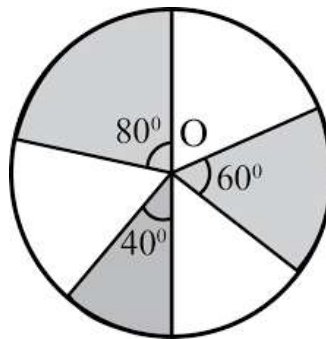
Q.1. The minute hand of a clock is 10cm long. Find the area of the face of the clock described by the minute hand between 8 a.m. and 8:25 a.m.

Q.2. Find the area of the given figure ABCDEF.



Q.3. Savita has a lamp placed at the centre of her square yard, each side measuring 20 m. The light of lamp covers a circle of radius 10 m on yard. What area of the yard is NOT lit by the lamp?

Q.4. In the given figure, three sectors of a circle of radius 7 cm, making angles 60° , 80° and 40° at the centre are shaded, then find the area of the shaded region.



Q.5. The circumference of a circular plot is 220 m. A 15m wide concrete track runs around outside the plot. Find the area of the track.

Questions of 3 marks each

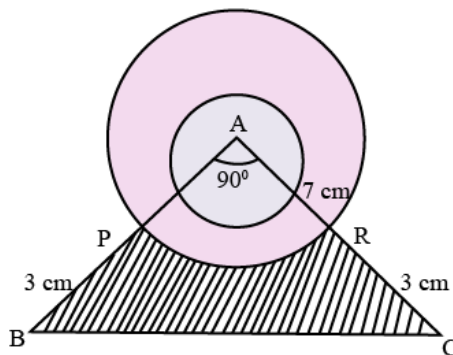
Q.6. A chord 10 cm long is drawn in a circle whose radius is $5\sqrt{2}$ cm. Find area of both the segments.

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| Q.7. | You are required to create a model of a circular wall clock and paste the numbers from 1 to 12 on its dial. What is the angle made at the center between 3 and 7? Find the area of this region, if the length of the minute hand of the clock is 21 cm. |
| Q.8. | A fountain is enclosed by a circular fence of circumference 11m and is surrounded by a circular path. The circumference of the outer boundary of the path is 16m. A gardener increases the area of the path to decrease the area enclosed by the fence such that the length of the fence decreases by 3m. The path is covered by bricks which cost Rs.125 per m ² . What will be the total cost to the nearest whole number required to cover the area by the bricks. |
| Q.9. | A Japanese fan can be made by sliding open its 7 small sections(or leaves), each of which is in the form of sectors of a circle having a central angle of 15 degrees. If the radius of this fan is 24 cm, find out the length of the lace that is required to cover its entire boundary. |



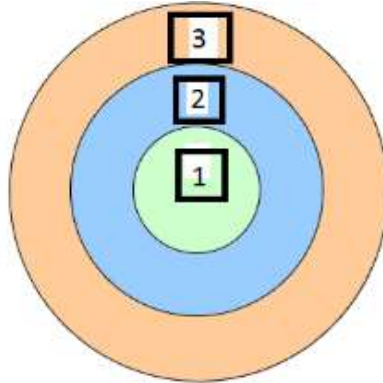
Questions of 5 marks each

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| Q.11. | A memento is made as shown in figure. Its base PBCR is silver plated from the front side at the rate of ₹ 20 per cm ² . Find the total cost of silver plating. |
| Q.12. | A chord PQ of a circle of radius 10 cm subtends an angle of 60° at the centre of circle. Find the area of major and minor segments of the circle. |



Q.13.

An archery target has three regions formed by three concentric circles as shown in the figure. If the diameters of the concentric circles are in the ratio 1:2:3 then find the ratio of the areas of three regions.



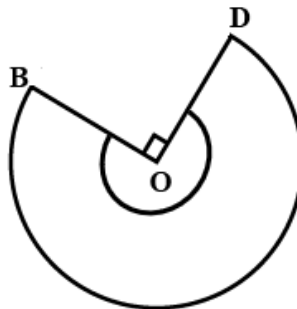
Q.14.

The shape of the top of a table in restaurant is that of a sector of a circle with centre O and $\angle BOD = 90^\circ$, if $BO = OD = 60$ cm find:

(i) the area of the top of the table.

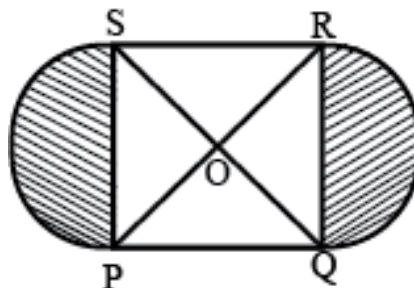
(ii) the perimeter of the table top.

(iii) the total cost of making the table top at the rate of ₹ 45.75 per 100 cm^2



Q.15.

In the given figure, PQRS is a square lawn with side $PQ = 42$ m. Two circular flower beds are there on the sides PS and QR with centre at O, the intersection of its diagonals. Find the total area of the two flower beds (shaded parts).



ANSWERS

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|------------|---------------|------------|------------------------------------------------------|------------|---------------------------|------------|-----------------------------|
| 1. | 130.95 sq.cm | 2. | 28.82 sq.cm | 3. | $(400 - 100\pi)$ sq. m | 4. | 77 sq.cm. |
| 5. | 40007.14 sq.m | 6. | 142.85 sq.cm | 7. | 462 sq.cm | 8. | ₹ 1910 |
| 9. | 528 sq.cm | 10. | 288.75 sq.cm | 11. | 11.5 sq.cm, ₹230 | 12. | 9.08 sq.cm, 304.92 sq.cm |
| 13. | 1 : 3 : 5 | 14. | (i) 8478 sq. cm (ii) 402.6 cm (iii) ₹ 3878.685 | 15. | 504 sq.m | | |