# MENSURATION
(CIRCLE-CIRCUMFERENCE AND AREA)

1. Find the circumference of a circle of radius 4 cm, if π is taken equal to 3.14.

2. Find the radius of a circle whose circumference is 10 cm; $\pi\frac{22}{7}$.

3. solve
   i. The diameter of a semi-circular protractor is 7cm; find its perimeter
   ii. If the perimeter of a semi-circular protractor is 66cm, find the diameter of the protractor. (Take $\pi=\frac{22}{7}$)

4. A wire is looped in the form of a circle of radius 28 cm. It is rebent into a square form. Determine the length of the side of the square.

5. PQRS is diameter of a circle of radius 6cm. the lengths PQ, QR and RS are equal. Semi- circles are drawn on diameters PQ and QS respectively as shown in the figure. Find the perimeter of the shaded drawn on diameters PQ and QS respectively as shown in the figure. Find the perimeter of the shaded region (use in $\pi=\frac{22}{7}$).
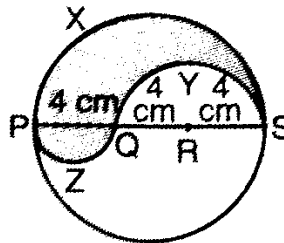

6. Solve
   i. A race track is in the form of a ring whose inner circumference is 352 m, and the outer circumference is 396m. Find the width of the track.
   ii. The inner circumference of a circular track is 220 m. the track is 7 m wide everywhere, calculate the cost of putting up a fence along the outer circle at the rate of Rs.2 per meter.(use $\pi=\frac{22}{7}$).

7. How many times will the wheel of a car rotate in a journey of 88km if it is know that the diameter of the wheel is 56 cm?(Take $\pi=\frac{22}{7}$).

8. Solve
   i. a man runs around a circle of radius 50 m at a speed of 12 km per hour. Find the time taken by him for going around in ten times. (Take $\pi=$ 3.14)
   ii. A bicycle wheel makes 5000 revolutions in moving 11 km. find the diameter of wheel.(Take $\pi=\frac{22}{7}$)

   iii. The diameter of the driving wheel of a bus in 140 cm. How many revolutions per minute must the wheel make in order to keep a speed of 66km per hour?

9. A boy is cycling such that the wheels of the cycle are making 140 revolution per minute. If the diameter of the wheel is 60 cm, calculate the speed per hour with which the boy is cycling (use $\pi = \frac{22}{7}$).

10. Find the area of the circle whose radius is 7cm.

11. A circular pond of diameter 40 metres is surrounded by a grass path 5 metres wide. Find the area of this path(Take $\pi = \frac{22}{7}$).

12. A copper wire, when bent in the form of a square, encloses an area of 484 cm2. If the same wire is bent in the form of a circle, find the area enclosed by it (Use $\pi = \frac{22}{7}$).

13. A house is placed for grazing inside a rectangular field 70m by 52 m and is tethered to one corner by a rope 21m long. On how much area can it graze?

14. In the given figure, find the area of the shaded region.(use $\pi = 3.14$).
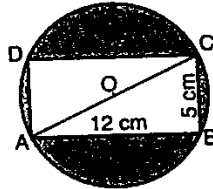
15. From a piece of cardboard, in the shape of a trapezium ABCD, and AB∥DC and∠ BCD = 90°, quarter circle is removed. Given, AB=BC=3.5cm and DE = 2cm, calculate the area of the remaining piece of the cardboard. (Take $\pi = \frac{22}{7}$).

16. A wire when bent in the form of an equilateral triangle encloses an area of $121\sqrt{3}$ cm^2. If the same wire is bent in the form of a circle, find the area of the circle.

17. The inside perimeter of a running track is 400 m as shown in the figure. The length of each of the straight portion is 90 m and the ends are semi-circles. If the track id everywhere 1.4m wide, find the area of the track. also, find the length of the outer running track.
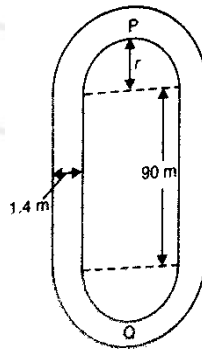
18. OABC is a rhombus whose three vertices A, B and C lie on a circle with centre O. If the radius of the circle is 10cm, find the area of the rhombus.

19. OABC is a rhombus three of whose vertices lie on a circle with centre O. if the area of the rhombus is $32\sqrt{3}$ cm^2, find the radius of the circle.

20. ABCP is a quadrant of a circle of radius 14 cm. with AC as diameter, semicircle is drawn . find the area of the shaded portion.