

CBSE Class 10 Mathematics
Revision Notes
CHAPTER 12
AREAS RELATED TO CIRCLES

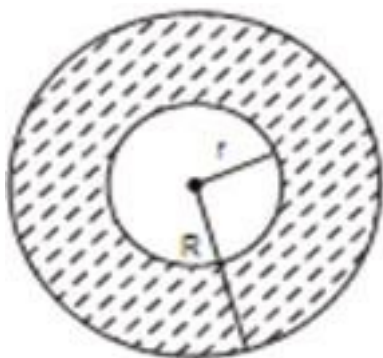
1. **Perimeter and Area of a Circle**
2. **Areas of Sector and Segment of a Circle**
3. **Areas of Combinations of Plane Figures**
4. **Miscellaneous Questions**

- Perimeter or Circumference of the circle = $2\pi r$, where r is the radius of the circle.

Or Circumference of the circle = πd , where d is the diameter of the circle.

- Area of circle = πr^2 where 'r' is the radius of the circle.
- Area of Semi circle = $\frac{\pi r^2}{2}$
- Area enclosed by two concentric circles
 $= \pi(R^2 - r^2)$
 $= \pi(R + r)(R - r); \quad R > r$

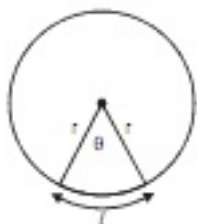
where 'R' and 'r' are radii of two concentric circles.



- The arc length ' l ' of a sector of angle ' θ ' in a circle of radius 'r' is given by

$$l = \frac{\theta}{360^\circ} \times 2\pi r$$

$$l = \frac{\theta}{180^\circ} \times \pi r$$



- If the arc subtends an angle θ , then area of the corresponding sector is $\frac{\theta}{360^\circ} \times \pi r^2$



The sector which is less than the semicircular region, is called the **minor sector** and the sector, which is more than the semicircular region is called the **major sector**.

- Area of segment = Area of sector - Area of corresponding triangle
- Area of major segment = Area of circle - Area of minor segment
- Angle described by minute hand in 60 minutes = 360° . Angle described by minute hand in 1 minute = $\left(\frac{360^\circ}{60}\right) = 6^\circ$