

**CLASS X : CHAPTER - 12**  
**AREAS RELATED TO CIRCLES**

**NCERT NICHOOD**

**Perimeter and Area of a Circle**

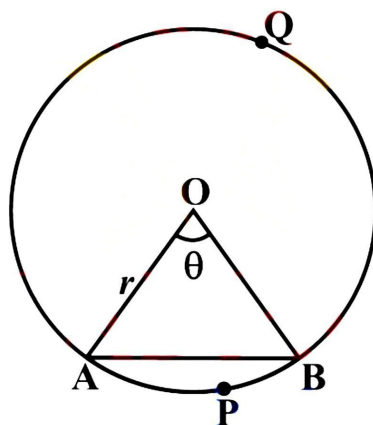
Perimeter/circumference of a circle =  $\pi \times \text{diameter}$   
=  $\pi \times 2r$  (where  $r$  is the radius of the circle)  
=  $2\pi r$

Area of a circle =  $\pi r^2$ , where  $\pi = \frac{22}{7}$

**Areas of Sector and Segment of a Circle**

Area of the sector of angle  $\theta = \frac{\theta}{360^\circ} \times \pi r^2$ , where  $r$  is the radius of the circle and  $\theta$  the angle of the sector in degrees

length of an arc of a sector of angle  $\theta = \frac{\theta}{360^\circ} \times 2\pi r$ , where  $r$  is the radius of the circle and  $\theta$  the angle of the sector in degrees



Area of the segment APB = Area of the sector OAPB – Area of  $\Delta$  OAB

$$= \frac{\theta}{360^\circ} \times \pi r^2 - \text{area of } \Delta \text{ OAB}$$

☞ Area of the major sector OAQB =  $\pi r^2$  – Area of the minor sector OAPB

☞ Area of major segment AQB =  $\pi r^2$  – Area of the minor segment APB

☞ Area of segment of a circle = Area of the corresponding sector – Area of the corresponding triangle