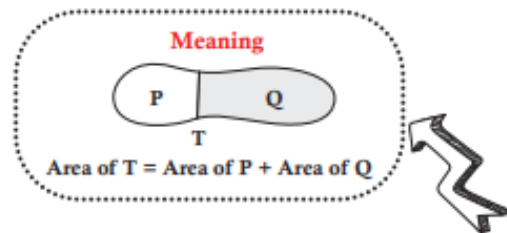
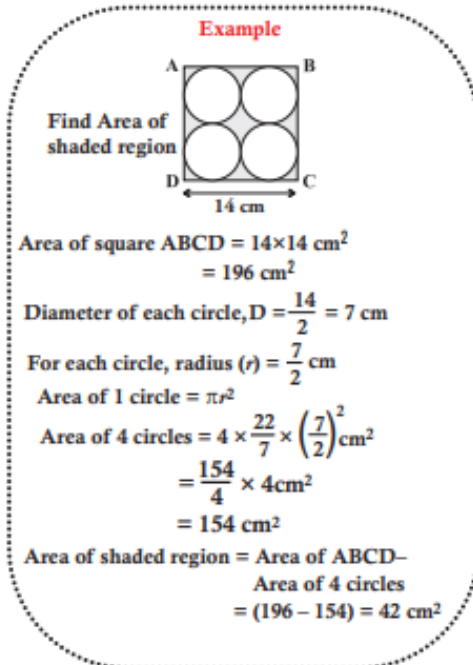


CHAPTER : 12 AREAS RELATED TO CIRCLES

MIND MAPS LEARNING MADE SIMPLE



Area - Combination of figures



Areas Related to Circles

Circle

• Circumference = $\pi \times \text{diameter} = 2\pi r$

• Area = πr^2



Meaning

Portion of the circular region enclosed by two radius and the corresponding arc



Sector

Area

$$A = \frac{\theta}{360^\circ} \times \text{area of circle}$$

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



Formula

Length of arc

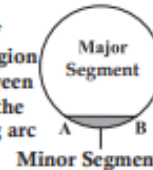
$$L = \frac{\theta}{360^\circ} \times \text{circumference}$$

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

Segment

Meaning

Portion of the circular region enclosed between a chord and the corresponding arc



Formula

Area = Area of the corresponding sector – Area of the corresponding triangle

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

$$= \frac{\pi r^2 \theta}{360^\circ} - \frac{1}{2} r^2 \sin \theta$$



$$\text{Area of Sector} = \frac{1}{2} \times L \times r$$