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Class-XI (MATHS)

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Topic \Rightarrow Trigonometry:-

Relation between degree and Radian:-

Since a Circle subtends at the center an angle whose radian measure is 2π , and its degree measure is 360° , it follows that

$$2\pi \text{ radian} = 360^\circ$$

$$\pi \text{ radian} = 180^\circ$$

$$\pi^c = 180^\circ$$

$$1^c = \frac{180^\circ}{\pi}$$

$$= 57^\circ 16' \text{ approx}$$

$$1^\circ = \frac{\pi}{180} \text{ radian}$$

$$= 0.01746 \text{ radian}$$

Ex-1 Convert $40^{\circ}21'$ into radian measure.

Ans →

$$\pi^{\circ} = 180^{\circ}$$

$$\text{hence } 40^{\circ}21' = 40\frac{1}{3} \text{ degree}$$

$$= \frac{\pi}{180} \times \frac{121}{3} \text{ radian}$$

$$= \frac{121\pi}{540} \text{ radian}$$

Do yourself :-

→ Convert the following into degree measure

(a)

$$\left(\frac{3}{4}\right)^{\circ}$$

(b)

$$\textcircled{120}^{\circ} \quad \frac{2\pi}{3}$$

(c)

$$\frac{\pi}{2}$$

(d)

$$\frac{\pi}{4}$$