Date
2/05/2020

TEACHING OF MATHEMATICS

D.El.Ed IIIth Sem

Topic - त्रिकोणमितीय

Period - Ist

⇒ $\sin\theta$, $\cos\theta$, $\tan\theta$ में सम्बन्ध

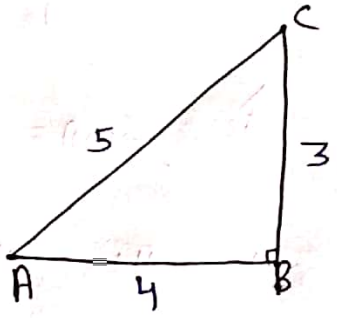
$$\tan\theta = \frac{\sin\theta}{\cos\theta}, \quad \cot\theta = \frac{\cos\theta}{\sin\theta}$$

Example यदि $\sin\theta = \frac{3}{5}$ हो तो

$\frac{\sec\theta - \tan\theta}{\cos\operatorname{ec}\theta}$ का मान ज्ञात करो

Solution हम जानते है कि

$$\sin\theta = \frac{\text{लम्ब}}{\text{कर्ण}} = \frac{BC}{AC} = \frac{3}{5}$$



पाइथागोरस प्रमेय का प्रयोग करने पर

$$(AC)^2 = (AB)^2 + (BC)^2$$

$$(AC)^2 - (BC)^2 = (AB)^2$$

$$(5)^2 - (3)^2 = (AB)^2$$

$$25 - 9 = (AB)^2$$

$$16 = (AB)^2$$

$$AB^2 = 16$$

$$AB = \sqrt{16}$$

$$AB = 4$$

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$$\sec\theta = \frac{\text{कर्ण}}{\text{आधार}} = \frac{5}{4}$$

$$\tan\theta = \frac{\text{लम्ब}}{\text{आधार}} = \frac{3}{4}$$

$$\operatorname{cosec}\theta = \frac{\text{कर्ण}}{\text{लम्ब}} = \frac{5}{3}$$

$$\frac{\sec\theta - \tan\theta}{\operatorname{cosec}\theta} = \frac{\frac{5}{4} - \frac{3}{4}}{\frac{5}{3}}$$

$$= \frac{\frac{5-3}{4}}{\frac{5}{3}} = \frac{\frac{2}{4}}{\frac{5}{3}} = \frac{2 \times 3}{4 \times 5}$$

$$= \frac{3}{10}$$ Ans

Qm-1 यदि $\sin A = \frac{9}{41}$ हो तो $\tan A - \operatorname{cosec} A$ का मान ज्ञात करो।

Ans $= \frac{-1559}{360}$

Qm-2 $\tan A = (\sqrt{2}-1)$ हो तो सिद्ध करो कि

$$\sin A \cdot \cos A = \frac{\sqrt{2}}{4}$$

21/5/2022.

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