



Chp - Introduction to Trigonometry.

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- ① If $x \sin^3 \theta + y \cos^3 \theta = \sin \theta \cdot \cos \theta$ & $x \sin \theta = y \cos \theta$,
Prove that $x^2 + y^2 = 1$
- ② If $\tan \theta + \sin \theta = m$ & $\tan \theta - \sin \theta = n$, Show that
 $m^2 - n^2 = 4\sqrt{mn}$.
- ③ If $\tan A = n \tan B$ & $\sin A = m \sin B$, Prove that
 $\cos^2 A = \frac{m^2 - 1}{n^2 - 1}$.
- ④ P.t. $\frac{(1 + \cot \theta + \tan \theta)(\sin \theta - \cos \theta)}{\sec^3 \theta - \operatorname{cosec}^3 \theta} = \sin^2 \theta \cdot \cos^2 \theta$.
- ⑤ P.t. $\frac{1}{\operatorname{cosec} x + \cot x} - \frac{1}{\sin x} = \frac{1}{\sin x} - \frac{1}{\operatorname{cosec} x - \cot x}$
- ⑥ P.t. $\frac{1 + \cos \theta - \sin^2 \theta}{\sin \theta (1 + \cos \theta)} = \cot \theta$.
- ⑦ If ~~$\sin A = \frac{3}{4}$~~ $\sin A = \frac{3}{4}$, calculate $\cos A$ & $\tan A$.
- ⑧ If $\frac{\sin \theta + \cos \theta}{\sin \theta - \cos \theta} = \frac{5}{3}$, find the value of $\frac{7 \tan \theta + 2}{2 \tan \theta + 7}$.
- ⑨ What is the maximum value of $\frac{1}{\operatorname{cosec} \theta}$.
- ⑩ If $\sin(A+B) = 1$ & $\cos(A-B) = \frac{\sqrt{3}}{2}$, $0^\circ < A+B \leq 90^\circ$ & $A > B$, then find measures of $\angle$'s A & B .