



Air maths tuition

Interact, engage and perform

Trig Identities to Prove - (sum and difference types)

$$\begin{aligned} \text{Prove } \frac{\sin(A+B)}{\sin(A-B)} &\equiv \frac{\tan A + \tan B}{\tan A - \tan B} && | \tan \theta = \frac{\sin \theta}{\cos \theta} \\ \text{Proof: } \frac{\sin(A+B)}{\sin(A-B)} &\equiv \frac{\sin A \cos B + \sin B \cos A}{\sin A \cos B - \sin B \cos A} \\ &= \frac{\frac{\sin A \cos B}{\cos A \cos B} + \frac{\sin B \cos A}{\cos A \cos B}}{\frac{\sin A \cos B}{\cos A \cos B} - \frac{\sin B \cos A}{\cos A \cos B}} \\ &= \frac{\tan A + \tan B}{\tan A - \tan B} \end{aligned}$$

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