



Air maths tuition

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Trigonometric Identities to Prove 4

Prove $\sec^2 \theta + \cot^2 \theta \equiv \tan^2 \theta + \operatorname{cosec}^2 \theta$

$$\sin^2 \theta + \cos^2 \theta \equiv 1$$

$$\tan^2 \theta + 1 \equiv \sec^2 \theta$$

$$1 + \cot^2 \theta \equiv \operatorname{cosec}^2 \theta$$

Proof: $\sec^2 \theta + \cot^2 \theta \equiv \tan^2 \theta + 1 + \operatorname{cosec}^2 \theta - 1$

$$\equiv \tan^2 \theta + \operatorname{cosec}^2 \theta$$



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