

Trigonometry : 3 : PROOFS

Prove the following

1) $\frac{\cos 2\theta}{\cos \theta + \sin \theta} \equiv \cos \theta - \sin \theta$

2) $\tan A + \cot A \equiv 2 \operatorname{cosec} 2A$

3) By writing $\sin 3A$ as $\sin(A + 2A)$ show
 $\sin 3A = 3 \sin A - 4 \sin^3 A$

4) By writing $\cos 3A$ as $\cos(2A + A)$ show
 $\cos 3A = 4 \cos^3 A - 3 \cos A$

5) show $\tan \theta + \cot \theta \equiv \frac{1}{\sin \theta \cos \theta}$

6) Prove $(\sec^2 \theta - 1)(\operatorname{cosec}^2 \theta - 1) \equiv 1$

7) Prove . $(\sec x + \tan x)(\sec x - \tan x) \equiv 1$

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