

## 7F Trig Identities with Double Angles formulae

1. Show that:

$$2\sin\frac{\theta}{2}\cos\frac{\theta}{2}\cos\theta \equiv \frac{1}{2}\sin 2\theta$$

2. Show that:

$$1 + \cos 4\theta \equiv 2\cos^2 2\theta$$

3. Prove the Identity:

$$\tan 2\theta \equiv \frac{2}{\cot\theta - \tan\theta}$$

4. Prove the Identity:

$$\sqrt{3}\cos 4\theta + \sin 4\theta \equiv 2\cos\left(4\theta - \frac{\pi}{6}\right)$$