

10C Part 2 Trigonometric Identities

1. Simplify the following expression:

a) $\sin^2 3\theta + \cos^2 3\theta$

b) $5 - 5\sin^2 \theta$

c) $\frac{\sin 2\theta}{\sqrt{1 - \sin^2 2\theta}}$

2. Prove that:

$$\frac{\cos^4\theta - \sin^4\theta}{\cos^2\theta} \equiv 1 - \tan^2\theta$$

3. Given that $p = 3\cos\theta$ and that $q = 2\sin\theta$, show that $4p^2 + 9q^2 = 36$