

4 **(a)** Prove that $(\cos \theta + \sin \theta)^2 \equiv 1 + \sin 2\theta$. **[2]**

(b) Hence or otherwise prove that $\sec 2\theta + \tan 2\theta \equiv \frac{\cos \theta + \sin \theta}{\cos \theta - \sin \theta}$. **[4]**