

3 In this question you must show detailed reasoning.

(a) Solve the equation $4\sin^2\theta = \tan^2\theta$ for $0^\circ \leq \theta \leq 180^\circ$. **[5]**

(b) Prove that $\frac{\sin^2\theta - 1 + \cos\theta}{1 - \cos\theta} \equiv \cos\theta$ ($\cos\theta \neq 1$). **[3]**