

**5**      (i) Prove the identity  $\frac{1}{\cos \theta} - \frac{\cos \theta}{1 + \sin \theta} \equiv \tan \theta$ . [4]

(ii) Solve the equation  $\frac{1}{\cos \theta} - \frac{\cos \theta}{1 + \sin \theta} + 2 = 0$  for  $0^\circ \leq \theta \leq 360^\circ$ . [3]