

- 8** **(i)** Show that $3 \sin x \tan x - \cos x + 1 = 0$ can be written as a quadratic equation in $\cos x$ and hence solve the equation $3 \sin x \tan x - \cos x + 1 = 0$ for $0 \leq x \leq \pi$. [5]
- (ii)** Find the solutions to the equation $3 \sin 2x \tan 2x - \cos 2x + 1 = 0$ for $0 \leq x \leq \pi$. [3]