Consider the trigonometric equation $2\cos(2\theta) + 4\cos(\theta) + 2 = -1$

i) Show it can be written as

$$4\cos^2(\theta) + 4\cos(\theta) + 1 = 0$$

[4 marks]

ii) Find the solutions of this equation, for $0 \leqslant x < 2\pi$ (radian) *[4 marks]*