

7 Given that

$$\frac{3 + \sin^2 \theta}{\cos \theta - 2} = 3 \cos \theta$$

(a) show that $\cos \theta = -\frac{1}{2}$

(4)

(b) Hence solve the equation

$$\frac{3 + \sin^2 3x}{\cos 3x - 2} = 3 \cos 3x \quad \text{for } 0^\circ \leq x < 180^\circ$$

(4)

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Question 7 continued

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(Total for Question 7 is 8 marks)

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