1st Class Maths

Trigonometric Identities

Revise this topic →

← Check your work

This booklet features original exam style questions designed by me. They do not feature in past papers but are good practice for your exams.

The content is designed to reflect the style of the AQA Level 2 Certificate in Further Maths.
It may not be suitable for other courses.

@1stclassmaths

Answer **all** questions in the spaces provided.

Do not write outside the box

1 Show that $2\cos^2\theta - \sin^2\theta \equiv 2 - 3\sin^2\theta$ **[2 marks]**

2 Show that $2\sin^2\theta\tan\theta + 2\cos\theta\sin\theta \equiv 2\tan\theta$ **[3 marks]**

3 Show that $\frac{\sin^3\theta}{\tan\theta} + \cos^3\theta \equiv \cos\theta$ **[3 marks]**

Do not write outside the box

4 Show that $\tan\theta + \cos\theta + \sin\theta\tan\theta \equiv \dfrac{1 + \sin\theta}{\cos\theta}$ **[3 marks]**

5 Show that $\dfrac{2\sin^2\theta + \sin^2\theta\cos\theta}{\sin\theta\cos\theta} \equiv 2\tan\theta + \sin\theta$ **[3 marks]**

6 Show that $8 - 3\sin\theta\cos\theta\tan\theta$ can be written in the form $a\cos^2\theta + b$ where a and b are integers. **[3 marks]**

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Do not write outside the box

7 Show that $\frac{1 + 3\sin\theta}{\sin\theta} - \frac{\sin\theta}{\tan^2\theta} \equiv \sin\theta + 3$ **[4 marks]**

8 Show that $\frac{(\sin\theta + 1)(\sin\theta - 1)}{\cos\theta} \equiv -\cos\theta$ **[4 marks]**

Do not write outside the box

9 Show that $(1 + \sin\theta)^2 + (1 + \cos\theta)^2 - 2\sin\theta \equiv 3 + 2\cos\theta$ **[4 marks]**

10 Show that $\dfrac{\sin\theta\cos\theta + \cos\theta}{\cos^2\theta} - \sin\theta\tan\theta \equiv \cos\theta + \tan\theta$ **[4 marks]**

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Do not write outside the box

11 Show that $\frac{2\sin\theta\cos\theta + 1}{\cos^2\theta} \equiv (1 + \tan\theta)^2$ **[4 marks]**

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