



eClassroom

Question 1

Sketch the curve C with equation:

$$y = \sin(x - 30^\circ), \quad -360^\circ \leq x \leq 360^\circ.$$

(a) Write down the exact coordinates of the points at which C meets the two coordinate axes.

(3 marks)

(b) Solve, for $-360^\circ \leq x \leq 360^\circ$,

$$4 \sin(x - 30^\circ) = \sqrt{6} - \sqrt{2},$$

showing each stage of your working.

(5 marks)

Total for question = 8 marks







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Question 3

Sketch the curve C with equation:

$$y = -\tan x, \quad 0 \leq x \leq 2\pi.$$

(a) Write down the exact coordinates of the points at which C meets the two coordinate axes.

(3 marks)

(b) Solve, for $0 \leq x \leq 2\pi$,

$$-\tan x = -\frac{1}{2},$$

showing each stage of your working.

(5 marks)

Total for question = 8 marks





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Question 4

Sketch the curves C and D , where:

$$C : y = \frac{1}{2} \sin x \quad \text{and} \quad D : y = \cos(2x), \quad 0 \leq x \leq 4\pi.$$

(a) Write down the exact coordinates of the points at which C and D meet the two coordinate axes.

(3 marks)

(b) Determine the number of solutions for x in the interval $0 \leq x \leq 4\pi$ where $C = D$.

(2 marks)

(c) Determine the number of solutions for x in the interval $0 \leq x \leq 40\pi$ where $C = D$.

(3 marks)

Total for question = 8 marks

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears to be a standard notebook page or a sheet of stationery.

This image shows a single page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.