3.3 Trigonometric Functions

Question Paper

Course	Edexcel IAL Maths: Pure 1
Section	3. Trigonometry
Topic	3.3 Trigonometric Functions
Difficulty	Easy

Time allowed: 30

Score: /25

Percentage: /100

Question 1

On separate diagrams sketch the graphs of:
(i) $y = \sin x$ $-180° \leq x \leq 180°$
(ii) $y = \cos x$ $0° \leq x \leq 360°$
(iii) $y = \tan x$ $-180° \leq x \leq 180°$

[6 marks]

Question 2

Sketch the graph of $y = \sin 2x$ for $0 \leq x \leq \pi$.

[3 marks]

Question 3

(i)   Write down the maximum value of y where $y = 3\cos x$.
(ii)   Write down the minimum value of y where $y = 9\sin x$.

[2 marks]

Question 4

The point P has coordinates $(90°, 1)$ and lies on the graph of $y = \sin x$, where $0° \leq x \leq 180°$.

Write down the coordinates of the image of point P under the following transformations:

    (i) $y = f(x) + 2$

    (ii) $y = f(3x)$

    (iii) $y = f(x + 30°)$
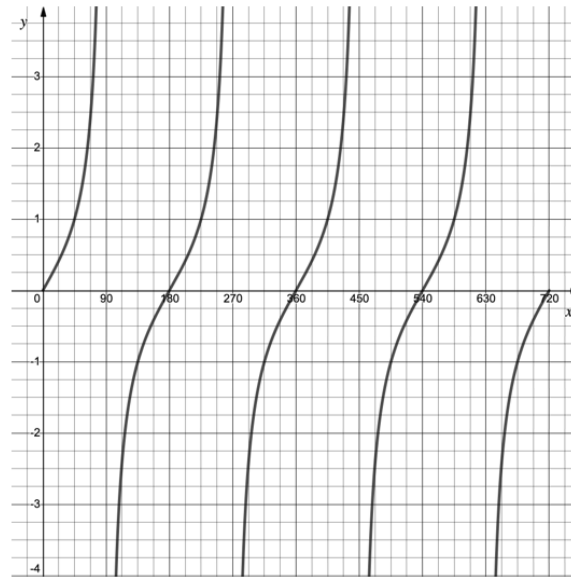
[3 marks]

Question 5

Write down the values for which $\cos x = \frac{1}{2}$, for $0 \leq x \leq 2\pi$.

[2 marks]

Question 6

The diagram below shows the graph of $y = \tan x$, for $0° \leq x \leq 720°$.

By adding a suitable line to the graph, show that there are four solutions to the equation $\tan x = 2$, for $0° \leq x \leq 720°$.

[2 marks]

Question 7

Sketch the graph of $y = -\sin \theta$ for $0° \leq \theta \leq 360°$.

[2 marks]

Question 8

Given that $f(\theta) = \cos\theta$, write the following functions in terms of $\cos\theta$.

    (i) $2f(\theta) + 3$

    (ii) $3f(2\theta)$

[3 marks]

Question 9

Write down all the values of x for which $\sin 3x = 0$, where $0 \le x \le 2\pi$.

[2 marks]