



IGCSE Additional Mathematics Ch 10 + 11

Trigonometry Test

Student Name:

Time allowed: 30 minutes

READ THESE INSTRUCTIONS FIRST

Write in dark blue or black pen.

You may use a soft pencil for any diagrams or graphs.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** the questions.

Write your answers on the separate Answer Booklet/Paper provided.

Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place in the case of angles in degrees, unless a different level of accuracy is specified in the question.

The use of an electronic calculator is expected, where appropriate.

You are reminded of the need for clear presentation in your answers.

The number of marks is given in brackets [] at the end of each question or part question.

The total number of marks for this paper is 22.

1.

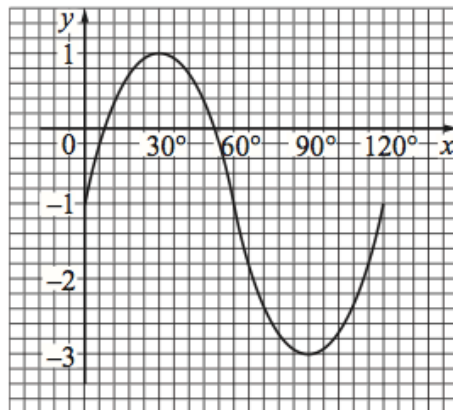
- (a) Given that $a = \sec x + \operatorname{cosec} x$ and $b = \sec x - \operatorname{cosec} x$, show that

$$a^2 + b^2 \equiv 2\sec^2 x \operatorname{cosec}^2 x. \quad [4]$$

- (b) Find, correct to 2 decimal places, the values of y between 0 and 6 radians which satisfy the equation

$$2\cot y = 3\sin y. \quad [5]$$

2.



The diagram shows part of the graph of $y = a\sin(bx) + c$. State the value of

- (i) a ,
(ii) b ,
(iii) c .

[3]

3.

(a) Solve, for $0^\circ \leq x \leq 360^\circ$, the equation

$$2\cot x = 1 + \tan x. \quad [5]$$

(b) Given that y is measured in radians, find the two smallest positive values of y such that

$$6\sin(2y + 1) + 5 = 0. \quad [5]$$