

Conic sections

Question Paper

Level	A Level
Subject	Mathematics (Pure)
Exam Board	AQA
Module	Core 1
Topic	Co-ordinate geometry
Sub Topic	Conic sections
Booklet	Question Paper

Time Allowed: 14 minutes

Score: /12

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	'77.5%	70%	62.5%	57.5%	45%	<45%

- 1** (a) (i) Express $x^2 + 10x + 19$ in the form $(x + p)^2 + q$, where p and q are integers. **(2)**
- (ii) Write down the coordinates of the vertex (minimum point) of the curve with equation $y = x^2 + 10x + 19$. **(2)**
- (iii) Write down the equation of the line of symmetry of the curve $y = x^2 + 10x + 19$. **(1)**
- (iv) Describe geometrically the transformation that maps the graph of $y = x^2$ onto the graph of $y = x^2 + 10x + 19$. **(3)**
- (b) Determine the coordinates of the points of intersection of the line $y = x + 11$ and the curve $y = x^2 + 10x + 19$. **(4)**

(Total 12 marks)