

Quadratics

Question Paper

Level	Pre U
Subject	Maths
Exam Board	Cambridge International Examinations
Topic	Quadratics
Booklet	Question Paper

Time Allowed: 35 minutes

Score: /29

Percentage: /100

Grade Boundaries:

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- 1 Solve the simultaneous equations $x + y = 1$, $x^2 - 2xy + y^2 = 9$. [6]
- 2 (i) Show that $2x^2 - 10x - 3$ may be expressed in the form $a(x + b)^2 + c$ where a , b and c are real numbers to be found. Hence write down the co-ordinates of the minimum point on the curve. [4]
- (ii) Solve the equation $4x^4 - 13x^2 + 9 = 0$. [3]
- 3 (i) Express $x^2 - 8x + 10$ in the form $(x - a)^2 + b$ where a and b are integers to be found. [3]
- (ii) Hence write down the minimum value of $x^2 - 8x + 10$ and the corresponding value of x . [2]
- 4 (i) Solve the equation $x^2 - 8x + 4 = 0$, giving your answer in the form $p \pm q\sqrt{3}$, where p and q are integers. [2]
- (ii) Expand and simplify $(6 + 2\sqrt{3})(2 - \sqrt{3})$. [3]
- 5 (i) Expand and simplify $(7 - 2\sqrt{3})^2$. [2]
- (ii) Show that
$$\frac{\sqrt{125}}{2 + \sqrt{5}} = 25 - 10\sqrt{5}$$
 [4]