

Simultaneous Equations with a Quadratic

Question Paper

Level	GCSE
Subject	Maths
Exam Board	Edexcel GCSE
Topic	Simultaneous Equations with a Quadratic
Grade Level	Grade 8/9
Booklet	Question Paper

Time Allowed: 58 minutes

Score: /48

Percentage: /100

Grade Boundaries:

1. Solve the simultaneous equations

$$x^2 + y^2 = 29$$

$$y - x = 3$$

.....
(Total 7 marks)

2. Bill said that the line $y = 6$ cuts the curve $x^2 + y^2 = 25$ at two points.

(a) By eliminating y show that Bill is incorrect.

(2)

(b) By eliminating y , find the solutions to the simultaneous equations

$$x^2 + y^2 = 25$$

$$y = 2x - 2$$

$$x = \dots\dots\dots y = \dots\dots\dots$$

$$\text{or } x = \dots\dots\dots y = \dots\dots\dots$$

(6)

(Total 8 marks)

3. By eliminating y , find the solutions to the simultaneous equations

$$\begin{aligned}x^2 + y^2 &= 25 \\ y &= x - 7\end{aligned}$$

$x = \dots\dots\dots y = \dots\dots\dots$
or $x = \dots\dots\dots y = \dots\dots\dots$

(Total 6 marks)

4. By eliminating y , find the solutions to the simultaneous equations

$$y - 2x = 3$$

$$x^2 + y^2 = 18$$

$$x = \dots\dots\dots y = \dots\dots\dots$$

$$\text{or } x = \dots\dots\dots y = \dots\dots\dots$$

(Total 7 marks)

5. Solve the simultaneous equations

$$x^2 + y^2 = 5$$

$$y = 3x + 1$$

$$x = \dots\dots\dots y = \dots\dots\dots$$

$$\text{or } x = \dots\dots\dots y = \dots\dots\dots$$

(Total 6 marks)

6. Solve the simultaneous equations

$$x + y = 4$$

$$x^2 + y^2 = 40$$

$$x = \dots\dots\dots, y = \dots\dots\dots$$

or

$$x = \dots\dots\dots, y = \dots\dots\dots$$

(Total 7 marks)

7. By eliminating x , find the solutions to the simultaneous equations

$$x - 2y = 1$$

$$x^2 + y^2 = 13$$

$$x = \dots\dots\dots, y = \dots\dots\dots$$

or $x = \dots\dots\dots, y = \dots\dots\dots$

(Total 7 marks)