



IGCSE · Cambridge (CIE) · Further Maths

🕒 36 mins ❓ 7 questions

Exam Questions

Simultaneous Equations

Linear Simultaneous Equations / Quadratic Simultaneous Equations

Medium (2 questions)	/8
Hard (2 questions)	/12
Very Hard (3 questions)	/16
Total Marks	/36

Medium Questions

- 1 The line $y = 5x + 6$ meets the curve $xy = 8$ at the points A and B . Find the coordinates of A and of B .

(3 marks)

- 2 Find the coordinates of the points of intersection of the curves $x^2 = 5y - 1$ and $y = x^2 - 2x + 1$.

(5 marks)

Hard Questions

1 (a) Solve the simultaneous equations

$$10^{x+2y} = 5,$$

$$10^{3x+4y} = 50,$$

giving x and y in exact simplified form.

(4 marks)

(b) Solve $2x^{\frac{2}{3}} - x^{\frac{1}{3}} - 10 = 0$.

(3 marks)

2 Find the coordinates of the points of intersection of the curve $x^2 + xy = 9$ and the line

$$y = \frac{2}{3}x - 2.$$

(5 marks)

Very Hard Questions

1 Solve the simultaneous equations.

$$\log_3(x + y) = 2$$

$$2\log_3(x + 1) = \log_3(y + 2)$$

(6 marks)

2 Solve the simultaneous equations.

$$x^2 + 3xy = 4$$

$$2x + 5y = 4$$

(5 marks)

3 Solve the following simultaneous equations.

$$3^x \times 9^{y-1} = 243$$

$$8 \times 2^{y-\frac{1}{2}} = \frac{2^{2x+1}}{4\sqrt{2}}$$

(5 marks)