

Write your name here

Surname

Other names

In the style of:

**Pearson Edexcel**

**Level 1/Level 2 GCSE (9 - 1)**

Centre Number

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Candidate Number

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# Mathematics

## Simultaneous Equations

**Higher Tier**

GCSE style questions arranged by topic

Paper Reference

**1MA1/2H**

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator.

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
- **Calculators may be used.**
- If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be 3.142 unless the question instructs otherwise.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**



### Information

- The total mark for this paper is
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

### Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►



**1** Solve the simultaneous equations

$$3x + 2y = 8$$

$$2x + 5y = -2$$

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

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

**(Total for Question 1 is 4 marks)**

**2** Solve the simultaneous equations

$$6x + 2y = -3$$

$$4x - 3y = 11$$

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

**(Total for Question 2 is 4 marks)**

**3** 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 for Question 3 is 6 marks)**

**4** Solve the simultaneous equations

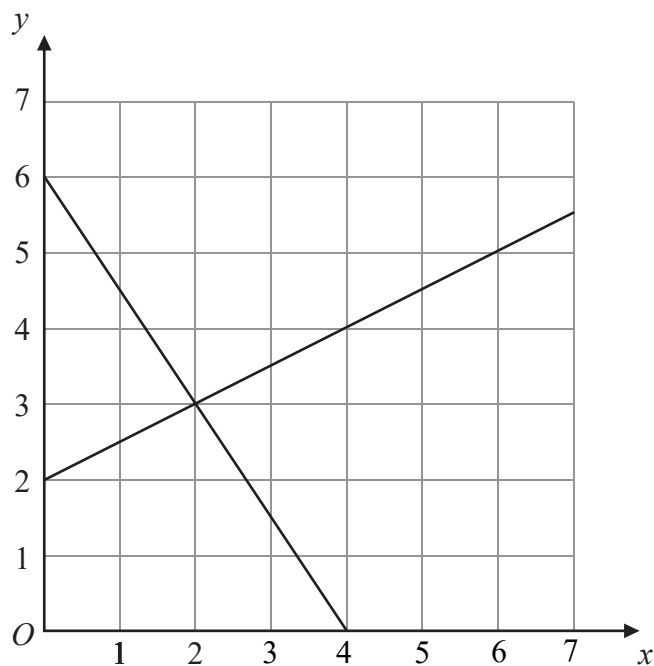
$$4x + y = -1$$

$$4x - 3y = 7$$

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

**(Total for Question 4 is 3 marks)**

5



The diagram shows graphs of  $y = \frac{1}{2}x + 2$

and  $2y + 3x = 12$

(a) Use the diagram to solve the simultaneous equations

$$y = \frac{1}{2}x + 2$$

$$2y + 3x = 12$$

$$x = \dots\dots\dots y = \dots\dots\dots \quad (1)$$

(b) Find an equation of the straight line which is parallel to the line  $y = \frac{1}{2}x + 2$  and passes through the point (0, 4).

$$\dots\dots\dots \quad (2)$$

**6** Solve the simultaneous equations

$$6x + 2y = -3$$

$$4x - 3y = 11$$

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

**(Total for Question 6 is 4 marks)**

7 Solve the simultaneous equations

$$4x + y = 10$$

$$2x - 3y = 19$$

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

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

**(Total for Question 7 is 3 marks)**



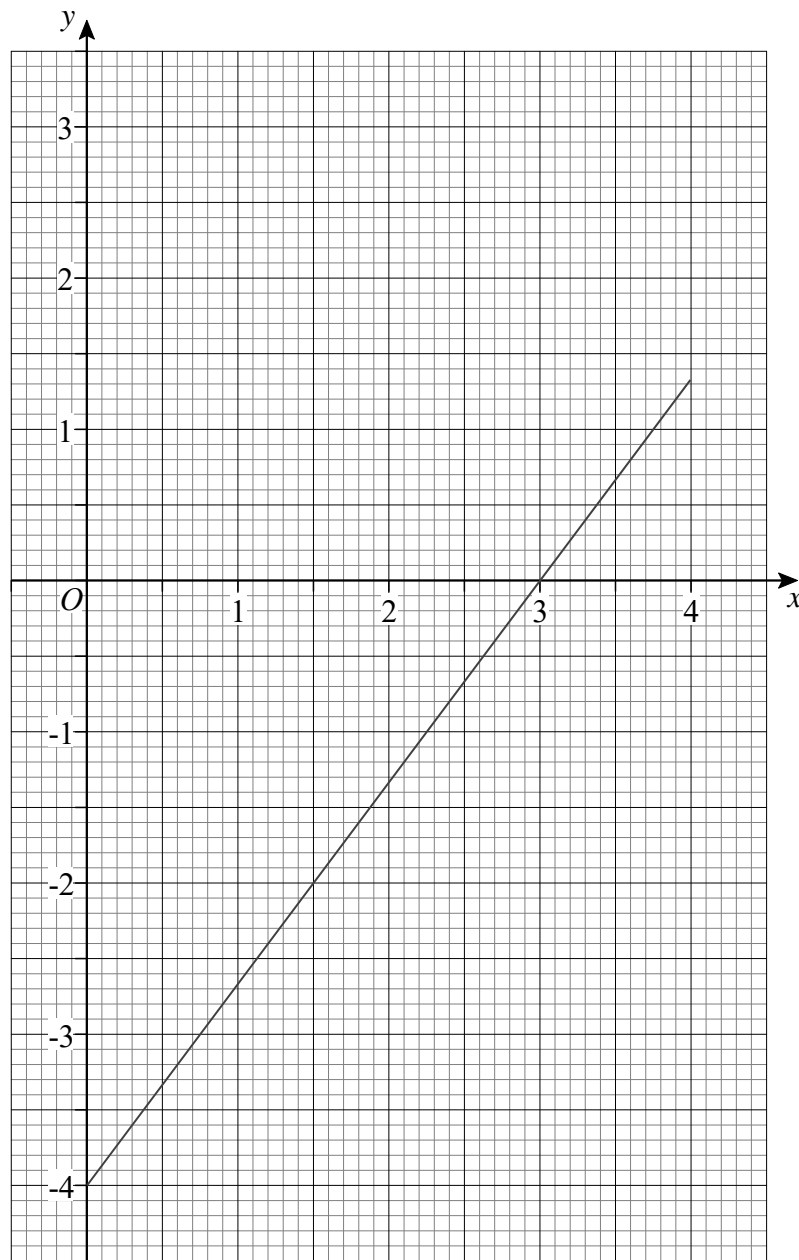
**8** Solve algebraically the simultaneous equations

$$\begin{aligned}x^2 + y^2 &= 25 \\ y - 2x &= 5\end{aligned}$$

.....  
**(Total for Question 8 is 3 marks)**

9

Here is the graph of  $4x - 3y = 12$  for values of  $x$  from 0 to 4



By drawing a second graph on the grid,  
work out an approximate solution to the simultaneous equations

$$4x - 3y = 12 \quad \text{and} \quad 3x + 2y = 6$$

.....  
(Total for Question 9 is 3 marks)

**10** Solve these simultaneous equations algebraically.

$$y = x - 3$$

$$y = 2x^2 + 8x - 7$$

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

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

**(Total for Question 10 is 6 marks)**

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