

Simultaneous Equations

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NAME _____

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- 1 Solve these simultaneous equations.

 EITHER PAPER 3 MARKS

$$4x + 5y = 39$$

$$4x - 5y = -31$$

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- 2 Solve the simultaneous equations

 EITHER PAPER 3 MARKS

$$y = 2x + 6$$

$$4x + 3y = 48$$

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- 3 $x = 3$ and $y = 8$ is the solution of the simultaneous equations

 EITHER PAPER 3 MARKS

$$6x + ay = 34$$

$$x - 5y = -37$$

Calculate the value of a .

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- 4 Solve these simultaneous equations.

 EITHER PAPER 3 MARKS

$$5x + 6y = 18$$

$$5x + 2y = 26$$

5 Solve the simultaneous equations

 EITHER PAPER 4 MARKS

$$5x + 4y = -11$$

$$7x + 12y = -9$$

6 A stationery shop sells folders and notepads.

 EITHER PAPER 4 MARKS

3 folders and 5 notepads cost £52 altogether.

9 folders and 2 notepads cost £91 altogether.

Calculate the cost of one folder and the cost of one notepad.

7 Here are two simultaneous equations.

 EITHER PAPER 4 MARKS

$$3x = 12 - 4y$$

$$5x - 4y = -44$$

(a) Write the first equation in the form $ax + by = c$.

(b) Solve the simultaneous equations.

- 8 A plumber charges a fixed call-out fee and then the same amount for every hour of work. EITHER PAPER 5 MARKS

A job that takes 4 hours costs £203.

A job that takes 6 hours costs £291.

- (a) Calculate the call-out fee and the amount charged for each hour.
(b) Work out the cost of a job that takes 9 hours.

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- 9 A car park charges £4 for a car and £6 for a van. EITHER PAPER 4 MARKS

One day there were 38 vehicles in the car park, and the total charge was £196.

Work out how many cars and how many vans there were.

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- 10 In a coding club, there are x boys and y girls. EITHER PAPER 5 MARKS

If 6 more boys and 14 more girls join, there would be half as many boys as girls.

- (a) Show that $y = 2x - 2$
(b) If instead 12 more boys and 2 more girls join the coding club, there would be the same number of boys and girls.

Work out the value of x and the value of y .

1	$x = 1, y = 7$	2	$x = 3, y = 12$
3	2	4	$x = 6, y = -2$
5	$x = -3, y = 1$	6	One folder costs £9 and one notepad costs £5.
7	(a) $3x + 4y = 12$ (b) $x = -4, y = 6$	8	(a) The call-out fee is £27 and the charge for each hour is £44. (b) £423
9	There were 16 cars and 22 vans.	10	(a) $x + 6 = \frac{y+14}{2}$, which rearranges to $y = 2x - 2$ (b) $x = 12$ and $y = 22$