Simultaneous Equations

GCSE Maths · Foundation tier · 16 questions · 54 marks

Name _____ Date _____ Score _____ / 54

Start at Level 1 and climb. Stuck? The worked answers show every step.

Level 1 · Warm-up | Level 2 · Build | Level 3 · Exam-style | Level 4 · Challenge (Foundation)

Level 1 · Warm-up

15 marks

Adding or subtracting the equations straight away, and simple substitution.

1 Solve the simultaneous equations $x + y = 10$ and $x - y = 4$. [3 marks]

Answer _____

2 Solve the simultaneous equations $2x + y = 11$ and $x + y = 7$. [3 marks]

Answer _____

3 Solve the simultaneous equations $3x + 2y = 16$ and $x - 2y = 0$. [3 marks]

Answer _____

4 Solve the simultaneous equations $2x + 3y = 13$ and $2x + y = 7$. [3 marks]

Answer _____

5 Solve the simultaneous equations $y = 2x$ and $x + y = 15$. [3 marks]

Answer _____

Level 2 · Build 14 marks
Multiplying one or both equations first, and a first look at a linear and a quadratic.

6 Solve the simultaneous equations $3x + 2y = 19$ and $x + 4y = 13$. [3 marks]

Answer _____

7 Solve the simultaneous equations $5x - 2y = 11$ and $3x + 4y = 4$. [4 marks]

Answer _____

8 Solve the simultaneous equations $4x + 3y = 2$ and $3x + 2y = 1$. [4 marks]

Answer _____

9 Solve the simultaneous equations $y = 3x - 5$ and $y = x + 7$. [3 marks]

Answer _____

Level 3 · Exam-style 14 marks
Forming equations from prices, numbers and animals, and spotting mistakes.

10 4 coffees and 3 cakes cost £14.50. 2 coffees and 5 cakes cost £12.50. Work out the cost of one coffee and the cost of one cake. [4 marks]

Answer _____

11 The sum of two numbers is 42 and their difference is 8. Work out the two numbers. [3 marks]

Answer _____

12 Mia solves $x + 2y = 11$ and $x + y = 7$. She subtracts the equations and writes $y = 18$. Explain Mia's mistake, and solve the equations correctly. [3 marks]

Answer _____

13 A farmer has some chickens and some sheep. Altogether there are 30 heads and 80 legs. How many chickens and how many sheep are there? [4 marks]

Answer _____

Level 4 · Challenge (Foundation) 11 marks
Grade 4–5 problem solving: forming and solving a pair of equations from words.

14 Adult tickets for a show cost £8 and child tickets cost £5. 40 tickets were sold for £260 altogether. How many adult tickets were sold? [4 marks]

Answer _____

15 The straight line $y = mx + c$ passes through the points $(1,\ 5)$ and $(3,\ 11)$. Find the values of m and c. [3 marks]

Answer _____

16 In 2 years' time, Jo will be twice as old as Sam. Two years ago, Jo was 3 times as old as Sam. How old are Jo and Sam now? [4 marks]

Answer _____