Simultaneous Equations

GCSE Mathematics • **Higher Tier** • Grades 6–7 • Non-calculator

Name: _____ Class: _____ Total: _____ / 78

Show all your working. Marks are given for correct method as well as the final answer.

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

Answer: _____

2. Solve $2x + y = 11$ and $x - y = 1$. **[3 marks]**

Answer: _____

3. Solve $3x + y = 14$ and $x + y = 6$. **[3 marks]**

Answer: _____

4. Solve $4x + 3y = 18$ and $4x + y = 10$. **[3 marks]**

Answer: _____

5. Solve $2x + 3y = 16$ and $x + y = 6$. **[4 marks]**

Answer: _____

6. Solve $3x - 2y = 7$ and $x + 2y = 9$. **[3 marks]**

Answer: _____

7. Solve $5x - y = 13$ and $2x - y = 4$. **[3 marks]**

Answer: _____

8. Solve $3x + 2y = 19$ and $2x + 5y = 31$. **[4 marks]**

Answer: _____

9. Solve $4x + 5y = 22$ and $3x - 2y = 5$. **[4 marks]**

Answer: _____

10. Solve $y = 2x + 1$ and $3x + y = 11$ by substitution. **[3 marks]**

Answer: _____

11. Solve $x = 3y - 2$ and $2x + y = 10$ by substitution. **[4 marks]**

Answer: _____

12. Solve $y = 5 - x$ and $2x + 3y = 13$. **[4 marks]**

Answer: _____

13. Solve $2x = y + 4$ and $3x + 2y = 13$. **[4 marks]**

Answer: _____

14. Solve $x + 2y = 8$ and $3x = 2y + 8$. **[4 marks]**

Answer: _____

15. Solve $2x + y = 1$ and $x - y = -4$. **[3 marks]**

Answer: _____

16. Solve $4x + 2y = 5$ and $2x - 2y = 1$. **[4 marks]**

Answer: _____

17. Three coffees and two teas cost £11. One coffee and two teas cost £5. Work out the cost of each. **[5 marks]**

Answer: _____

18. Five pens and one ruler cost £4.20. Two pens and one ruler cost £2.10. Work out the cost of a pen. **[4 marks]**

Answer: _____

19. The line $y = x + 1$ meets the curve $y = x^2 - 1$.

(a) Show that $x^2 - x - 2 = 0$. **[3 marks]**

(b) Find the coordinates of both intersection points. **[4 marks]**

Answer: _____

20. A cinema charges £a for an adult and £c for a child. Two adults and three children cost £31. One adult and five children cost £33.

(a) Write down two equations. **[2 marks]**

(b) Solve them to find both prices. **[4 marks]**

Answer: _____

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