



2.6 – Simultaneous equations

Student name: _____ Score: _____

1. Solve the simultaneous equations.

$$\begin{aligned} 2x + 3y &= 7 \\ 5x - 4y &= -17 \end{aligned}$$

$$\begin{aligned} x &= \dots -1 \dots \dots \dots \\ y &= \dots 3 \dots \dots \dots \end{aligned} \quad [4]$$

2. The cost of a mango is \$ m .
The cost of a pineapple is \$ p .

(a) Write an expression, in terms of m and p , for the cost of 2 mangoes and 3 pineapples.

$$\text{\$ } \dots 2m + 3p \dots \dots \dots [1]$$

(b) The cost of 2 mangoes and 3 pineapples is \$13.
The cost of 6 mangoes and 2 pineapples is \$18.

Write down two equations and solve them to find the cost of one mango and the cost of one pineapple.

$$\begin{aligned} \text{mango} &= \text{\$ } \dots 2 \dots \dots \dots \\ \text{pineapple} &= \text{\$ } \dots 3 \dots \dots \dots \end{aligned} \quad [4]$$

3. Solve the simultaneous equations.

$$\begin{aligned} x - 2y &= 7 \\ x + 2y &= 3 \end{aligned}$$

$$\begin{aligned} x &= \dots 5 \dots \dots \dots \\ y &= \dots -1 \dots \dots \dots \end{aligned} \quad [2]$$

4. Solve the simultaneous equations.

$$\begin{aligned} 3p + 4q &= 7 \\ 5p + 6q &= 10 \end{aligned}$$

$$\begin{aligned} p &= \dots -1 \dots \dots \dots \\ q &= \dots 2.5 \dots \dots \dots \end{aligned} \quad [4]$$

5. Solve these simultaneous equations.

$$\begin{aligned} y &= 2x - 8 \\ 3x + 2y &= 5 \end{aligned}$$

$$\begin{aligned} x &= \dots 3 \dots \dots \dots \\ y &= \dots -2 \dots \dots \dots \end{aligned} \quad [3]$$

6. Solve these simultaneous equations.

$$\begin{aligned} 5x + 2y &= 11 \\ 4x - 3y &= 18 \end{aligned}$$

$$\begin{aligned} x &= \dots 3 \dots \dots \dots \\ y &= \dots -2 \dots \dots \dots \end{aligned} \quad [4]$$



7. Solve the simultaneous equations.

$$\begin{aligned}3x - 2y &= 7 \\ 5x + 2y &= 1\end{aligned}$$

$$\begin{aligned}x &= \dots 1 \dots \\ y &= \dots -2 \dots\end{aligned} \quad [2]$$

8. Solve the simultaneous equations.
You must show all your working.

$$\begin{aligned}3x + 2y &= -5 \\ 2x - 5y &= 3\end{aligned}$$

$$\begin{aligned}x &= \dots -1 \dots \\ y &= \dots -1 \dots\end{aligned} \quad [4]$$

9. Solve the simultaneous equations.

$$\begin{aligned}3g - 2h &= 11 \\ g - 2h &= 5\end{aligned}$$

$$\begin{aligned}g &= \dots 3 \dots \\ h &= \dots -1 \dots\end{aligned} \quad [2]$$

10. Solve the simultaneous equations.

$$\begin{aligned}u - w &= 9 \\ 3u + w &= 19\end{aligned}$$

$$\begin{aligned}u &= \dots 7 \dots \\ w &= \dots -2 \dots\end{aligned} \quad [4]$$

11. Solve the simultaneous equations.

$$\begin{aligned}4x - 3y &= 12 \\ 6x - y &= 11\end{aligned}$$

$$\begin{aligned}x &= \dots 1.5 \dots \\ y &= \dots -2 \dots\end{aligned} \quad [3]$$

12. $y = x + 1$ and $y = 2 - x$

Find the value of x .

$$x = \dots 0.5 \dots \quad [2]$$

13. Solve the simultaneous equations.

$$\begin{aligned}4x + 3y &= 0 \\ 2x - y &= 5\end{aligned}$$

$$\begin{aligned}x &= \dots 1.5 \dots \\ y &= \dots -2 \dots\end{aligned} \quad [3]$$

14. Solve these simultaneous equations.

$$\begin{aligned}x - 3y &= 7 \\ x - 2y &= 5\end{aligned}$$

$$\begin{aligned}x &= \dots 1 \dots \\ y &= \dots -2 \dots\end{aligned} \quad [2]$$



15. Solve the simultaneous equations.

$$\begin{aligned}a + b &= 16 \\ 2a - b &= 17\end{aligned}$$

$$\begin{aligned}a &= \dots 11 \dots \\ b &= \dots 5 \dots\end{aligned} \quad [2]$$

16. Solve the simultaneous equations.

$$\begin{aligned}3x + 2y &= -1 \\ 7x - y &= 26\end{aligned}$$

$$\begin{aligned}x &= \dots 3 \dots \\ y &= \dots -5 \dots\end{aligned} \quad [2]$$

17. Solve the simultaneous equations.

$$\begin{aligned}2x + 3y &= 5 \\ y &= 3x + 9\end{aligned}$$

$$\begin{aligned}x &= \dots -2 \dots \\ y &= \dots 3 \dots\end{aligned} \quad [3]$$

18. Solve the simultaneous equations.

$$\begin{aligned}5x + 2y &= -12 \\ 3x - y &= -5\end{aligned}$$

$$\begin{aligned}x &= \dots -2 \dots \\ y &= \dots -1 \dots\end{aligned} \quad [3]$$

19. Solve the simultaneous equations.

$$\begin{aligned}x - 3y &= 4 \\ 5x - 6y &= -7\end{aligned}$$

$$\begin{aligned}x &= \dots -5 \dots \\ y &= \dots -3 \dots\end{aligned} \quad [3]$$

20. The mean of two numbers is 46.

The difference between the two numbers is 12.

Find the two numbers.

$$\dots 40 \dots \text{ and } \dots 52 \dots \quad [2]$$

21. Solve the simultaneous equations.

$$\begin{aligned}3x + 2y &= 4 \\ 2x - 3y &= 7\end{aligned}$$

$$\begin{aligned}x &= \dots 2 \dots \\ y &= \dots -1 \dots\end{aligned} \quad [4]$$

22. Solve the simultaneous equations.

$$3t - u = -5$$

$$3t + 2u = 1$$

$$t = \dots \overset{-1}{\dots} \dots$$

$$u = \dots \overset{2}{\dots} \dots [2]$$

23. Solve the simultaneous equations.

$$2p - 3q = 7$$

$$p + 3q = 2$$

$$p = \dots \overset{3}{\dots} \dots$$

$$q = \dots \overset{-\frac{1}{3}}{\dots} \dots [2]$$

24. Solve the simultaneous equations.

$$3x - 2y = 12$$

$$5x + y = 7$$

$$x = \dots \overset{2}{\dots} \dots$$

$$y = \dots \overset{-3}{\dots} \dots [3]$$

25. Solve the simultaneous equations.

You must show all your working.

$$4x + 3y = -10$$

$$3x - 4y = 5$$

$$x = \dots \overset{-1}{\dots} \dots$$

$$y = \dots \overset{-2}{\dots} \dots [4]$$

