

Solving 3 Simultaneous Equations

Solve the simultaneous equations:

$$\begin{aligned}x + y + z &= 6 \\2x + 3y - z &= 4 \\x + 5y + 2z &= 13\end{aligned}$$

$$x = 2, y = 1, z = 3$$

Solve the simultaneous equations:

$$\begin{aligned}x + y + 2z &= 12 \\5x - 2y + z &= 22 \\x - y + z &= 9\end{aligned}$$

$$x = 3, y = -1, z = 5$$

Solve the simultaneous equations:

$$\begin{aligned}x + y + z &= 0 \\-2x + y + 2z &= 7 \\4x - y - z &= -5\end{aligned}$$

$$x = -1, y = -3, z = 4$$

1 banana, 1 apple and 1 orange costs 90p. 2 bananas, 3 apples and 1 orange costs £1.90. 4 bananas, 1 apple and 3 oranges costs £2.50. Work out the cost of each piece of fruit.

$$\begin{aligned}\text{Banana} &= 40\text{p} \\ \text{Apple} &= 30\text{p} \\ \text{Orange} &= 20\text{p}.\end{aligned}$$

Explain why it is not possible to solve these three simultaneous equations.

$$\begin{aligned}x + y + z &= 6 \\2x + 2y + 2z &= 12 \\x + 3y - z &= 10\end{aligned}$$

The second equation is a multiple of the first equation