

Simultaneous Equations: Substitution

1

Solve the simultaneous equations.

(1) $y = x + 2$

(2) $3x + y = 18$

Substitute (1) into (2)

$3x + (x + 2) = 18$

$x = \underline{\hspace{2cm}}, y = \underline{\hspace{2cm}}$

Check $\underline{\hspace{2cm}}$

2

Solve the simultaneous equations.

(1) $y = x - 2$

(2) $3x + y = 18$

Substitute (1) into (2)

$x = \underline{\hspace{2cm}}, y = \underline{\hspace{2cm}}$

Check $\underline{\hspace{2cm}}$

3

Solve the simultaneous equations.

(1) $y = 2x + 1$

(2) $4x + 3y = 23$

$x = \underline{\hspace{2cm}}, y = \underline{\hspace{2cm}}$

Check $\underline{\hspace{2cm}}$

4

Solve the simultaneous equations.

(1) $y = 3x - 1$

(2) $2x + 2y = 22$

$x = \underline{\hspace{2cm}}, y = \underline{\hspace{2cm}}$

Check $\underline{\hspace{2cm}}$

5

Solve the simultaneous equations.

(1) $y = x - 2$

(2) $3x - y = 18$

$x = \underline{\hspace{2cm}}, y = \underline{\hspace{2cm}}$

Check $\underline{\hspace{2cm}}$

6

Solve the simultaneous equations.

(1) $y = 2x + 8$

(2) $3x + y = 3$

$x = \underline{\hspace{2cm}}, y = \underline{\hspace{2cm}}$

Check $\underline{\hspace{2cm}}$

7

Solve the simultaneous equations.

(1) $y = 10 - 2x$

(2) $5x - 2y = 7$

$x = \underline{\hspace{2cm}}, y = \underline{\hspace{2cm}}$

Check $\underline{\hspace{2cm}}$

8

Solve the simultaneous equations.

(1) $6x + y = 7$

(2) $y = 2x + 3$

$x = \underline{\hspace{2cm}}, y = \underline{\hspace{2cm}}$

Check $\underline{\hspace{2cm}}$

Simultaneous Equations: Substitution *further practice*

9

Solve the simultaneous equations.

(1) $y = x + 3$

(2) $4x - 3y = -4$

Answer $\underline{\hspace{2cm}}$

10

Choose a method, then solve the simultaneous equations.

(1) $2x + 5y = 3$

(2) $2x - y = 9$

Answer $\underline{\hspace{2cm}}$

11

The lines $y = 2x + 1$ and $y = 5x - 8$ cross at the point P .

Find the coordinates of P .

Answer $\underline{\hspace{2cm}}$

12

A rectangle is 3 cm longer than it is wide. Its perimeter is 38 cm. Let l be its length and w its width, in cm. Find its length and width.

Answer $\underline{\hspace{2cm}}$

13

A large bottle holds 3 times as much as a small bottle. 2 large bottles and 5 small bottles hold 4400 ml. How much does each bottle hold?

Answer $\underline{\hspace{2cm}}$

14

Sam substitutes $y = x - 4$ into $5x - 2y = 17$ and writes $5x - 2x - 8 = 17$. What has Sam done wrong? Solve the equations.

Answer $\underline{\hspace{2cm}}$

15

Solve the simultaneous equations.

(1) $x = 3 - 2y$

(2) $4x + 5y = 0$

Answer $\underline{\hspace{2cm}}$

16

Jo says: "You can only use substitution when one of the equations starts $y =$." Explain why Jo is wrong.

Answer $\underline{\hspace{2cm}}$