

Simultaneous Equations: Special Cases

1

Solve these equations, or show there is no solution or infinitely many.

(1) $x + 2y = 5$

(2) $3x + 6y = 11$

(1) $\times 3$

(3) $3x + 6y = 15$

(3) $- (2)$

Answer _____

The lines _____

2

Solve these equations, or show there is no solution or infinitely many.

(1) $2x - 3y = 4$

(2) $8x - 12y = 16$

(1) $\times 4$

(3) $8x - 12y = 16$

Answer _____

The lines _____

3

Solve these equations, or show there is no solution or infinitely many.

(1) $5x + y = 3$

(2) $10x + 2y = 3$

(1) $\times 2$

Answer _____

The lines _____

4

Solve these equations, or show there is no solution or infinitely many.

(1) $3x - 4y = 2$

(2) $-6x + 8y = -4$

Answer _____

The lines _____

5

Solve these equations, or show there is no solution or infinitely many.

(1) $x + 4y = 6$

(2) $3x + 10y = 16$

Answer _____

The lines _____

6

Solve these equations, or show there is no solution or infinitely many.

(1) $y = 3x + 2$

(2) $9x - 3y = 4$

Answer _____

The lines _____

7

Solve these equations, or show there is no solution or infinitely many.

(1) $6x + 4y = 10$

(2) $9x + 6y = 15$

Answer _____

The lines _____

8

Solve these equations, or show there is no solution or infinitely many.

(1) $x - 2y = 4$

(2) $-3x + 4y = -11$

Answer _____

The lines _____

Simultaneous Equations: Special Cases *further practice*

9

How many solutions do these simultaneous equations have? Show your working.

(1) $x = 4 - 2y$

(2) $3x + 6y = 12$

Answer _____

10

Find the value of k so that $5x - 2y = 4$ and $kx - 6y = 1$ have no solution.

Answer _____

11

Find a and b so that $3x + ay = 5$ and $6x + 8y = b$ have infinitely many solutions.

Answer _____

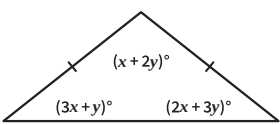
12

Sam solves $2x + 3y = 6$ and $4x + 6y = 12$. His working ends $0 = 0$, so he writes $x = 0, y = 0$. What has Sam done wrong? Give two solutions.

Answer _____

13

This isosceles triangle is not drawn accurately. Find x, y and the three angles.



Answer _____

14

£8000 is split between two accounts, both paying simple interest for one year. One pays 2% and the other 4%. Together they earn £250. How much is in each account?

Answer _____

15

Solve $47x + 23y = 209$ and $23x + 47y = 281$. Add the whole equations, then subtract them. What do you notice?

Answer _____

16

Write your own pair of simultaneous equations that the method in Q15 works on. Solve them that way. Explain why it works.

Answer _____