

# Answers: Introduction to simultaneous equations

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## Summary

Answers to questions relating to the guide on introduction to simultaneous equations.

*These are the answers to [Questions: Introduction to simultaneous equations](#).*

**Please attempt the questions before reading these answers!**

## Q1

- 1.1. The second equation is a multiple of the first. This means there are infinitely many solutions.
- 1.2. The second equation is also a multiple of the first. Thus, there are infinitely many solutions.
- 1.3. The two lines are not parallel and not multiples of each other, so they intersect at one point. There is one unique solution.

## Q2

- 2.1.  $x = 4$  and  $y = -3$ .
- 2.2.  $x = -2$  and  $y = 13$ .
- 2.3.  $x = \frac{6}{13}$  and  $y = \frac{69}{13}$ .
- 2.4.  $x = \frac{16}{5}$  and  $y = \frac{12}{5}$ .
- 2.5.  $x = \frac{73}{25}$  and  $y = \frac{93}{25}$ .
- 2.6.  $x = 1$  and  $y = 5$ .
- 2.7.  $x = \frac{19}{10}$  and  $y = \frac{17}{10}$ .

### Q3

3.1.  $x = 1$  and  $y = -2$ .

3.2.  $x = -3$  and  $y = -4$ .

3.3.  $x = \frac{31}{24}$  and  $y = -\frac{1}{12}$ .

3.4.  $x = 3$  and  $y = \frac{2}{3}$ .

3.5.  $x = \frac{127}{44}$  and  $y = \frac{3}{44}$ .

3.6.  $x = -\frac{18}{49}$  and  $y = \frac{39}{49}$ .

3.7.  $x = \frac{32}{15}$  and  $y = -\frac{11}{5}$ .

### Q4

4.1.  $x = \frac{5}{3}$  and  $y = -\frac{2}{3}$ .

4.2.  $x = 4$  and  $y = 0$ .

4.3.  $x = \frac{88}{19}$  and  $y = -\frac{1}{19}$ .

4.4.  $x = \frac{47}{26}$  and  $y = \frac{12}{13}$ .

4.5.  $x = \frac{52}{11}$  and  $y = -\frac{1}{11}$ .

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### Version history

v1.0: initial version created 12/24 by Ollie Brooke as part of a University of St Andrews VIP project.

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