

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. $x = \frac{6}{13}, y = \frac{69}{13}$.
- 2.2. $x = \frac{16}{5}, y = \frac{12}{5}$.
- 2.3. $x = \frac{73}{25}, y = \frac{93}{25}$.
- 2.4. $x = 1, y = 5$
- 2.5. $x = \frac{19}{10}, y = \frac{17}{10}$.

Q3

- 3.1 $x = \frac{31}{24}, y = -\frac{1}{12}$
- 3.2 $x = 3, y = \frac{2}{3}$

$$3.3 \ x = \frac{127}{44}, y = \frac{3}{44}$$

$$3.4 \ x = -\frac{18}{49}, y = \frac{39}{49}$$

$$3.5 \ x = \frac{32}{15}, y = -\frac{11}{5}$$

Q4

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

$$4.2 \ x = 4, y = 0$$

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

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

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

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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