

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 $y = -\frac{1}{11}$.

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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