Simultaneous Equations

Year 10–11 Maths · Years 10–11 · NCEA Level 1 · About 30 minutes · 8 questions

Name _____ Date _____ Score / 8

WHAT YOU WILL PRACTISE

- Solve simultaneous equations by elimination
- Solve simultaneous equations by substitution
- Form and solve simultaneous equations from a context

WORKED EXAMPLE

Solve $2x + y = 9$ and $x - y = 3$.

1. The y terms have opposite signs, so add the equations: $3x = 12$.
2. Divide by 3: $x = 4$.
3. Substitute into the first equation: $2 \times 4 + y = 9$, so $y = 1$.
4. Check in the second equation: $4 - 1 = 3$.

Answer: $x = 4$, $y = 1$

Questions

Show your working in the space under each question.

1. Solve $x + y = 10$ and $x - y = 4$

2. Solve $2x + y = 11$ and $x + y = 7$

3. Solve $3x + 2y = 16$ and $x + 2y = 8$

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4. Solve $2x + 3y = 13$ and $2x - y = 1$

5. Solve $3x + y = 14$ and $2x + 3y = 14$

6. Solve $5x - 2y = 11$ and $3x + 4y = 17$

7. Solve $y = 2x + 1$ and $3x + y = 16$

8. Two coffees and three teas cost $9.90. Four coffees and one tea cost $11.30. Find the cost of one coffee and the cost of one tea.

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Answers: Simultaneous Equations

Mark your own work, then go back to any question you got wrong before reading the tutor tip.

Q	QUESTION	ANSWER
1	Solve x + y = 10 and x − y = 4	**x = 7, y = 3**
2	Solve 2x + y = 11 and x + y = 7	**x = 4, y = 3**
3	Solve 3x + 2y = 16 and x + 2y = 8	**x = 4, y = 2**
4	Solve 2x + 3y = 13 and 2x − y = 1	**x = 2, y = 3**
5	Solve 3x + y = 14 and 2x + 3y = 14	**x = 4, y = 2**
6	Solve 5x − 2y = 11 and 3x + 4y = 17	**x = 3, y = 2**
7	Solve y = 2x + 1 and 3x + y = 16	**x = 3, y = 7**
8	Two coffees and three teas cost $9.90. Four coffees and one tea cost $11.30. Find the cost of one coffee and the cost of one tea.	**Coffee $2.40, tea $1.70**

TUTOR TIP

Same signs subtract, different signs add. Then always check your pair of values in the equation you did not use for substitution.

Stuck on a question? Work through it live with a tutor.

YFCampus offers one-to-one online Maths tutoring matched to your school curriculum. Book a free trial class at **www.yfcampus.com/nz**

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