5.11 Simultaneous Equations: 10-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Solve the simultaneous equations by substitution.

$y = 2x + 1$
$x + y = 10$

(Total for Question 1 is 2 marks)

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2 Solve the simultaneous equations:

$x + y = 15$
$x - y = 3$

(Total for Question 2 is 3 marks)

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3 Show that $x = 5$, $y = 4$ is not a solution of the simultaneous equations:

$3x + 2y = 17$
$x - y = 1$

(Total for Question 3 is 3 marks)

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Mark scheme · 5.11 Simultaneous Equations: 10-minute Pack

Question 1

substitute y = 2x + 1 into x + y = 10 leading to x + 2x + 1 = 10 or 3x + 1 = 10	**M1**
x = 3 cao; then y = 7 cao	**A1**

Answer: x = 3, y = 7

Question 2

adds the two equations to eliminate y (or equivalent valid elimination method)	**M1**
x = 9	**A1**
y = 6 cao	**A1**

Answer: x = 9, y = 6

Question 3

shows x - y = 1 is satisfied (5 - 4 = 1)	**B1**
substitutes into 3x + 2y to obtain 23	**B1**
correct conclusion with reason, e.g. 'since 23 is not equal to 17, x = 5, y = 4 does not satisfy both equations, so it is not a solution'	**B1**

Answer: x - y = 1 is satisfied, but 3x + 2y = 23, not 17, so x = 5, y = 4 is not a solution.

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