Solving simultaneous equations graphically

Grade 5 | Foundation and Higher | 10 questions, 29 marks

GCSE Maths topic practice

Scan for the solutions

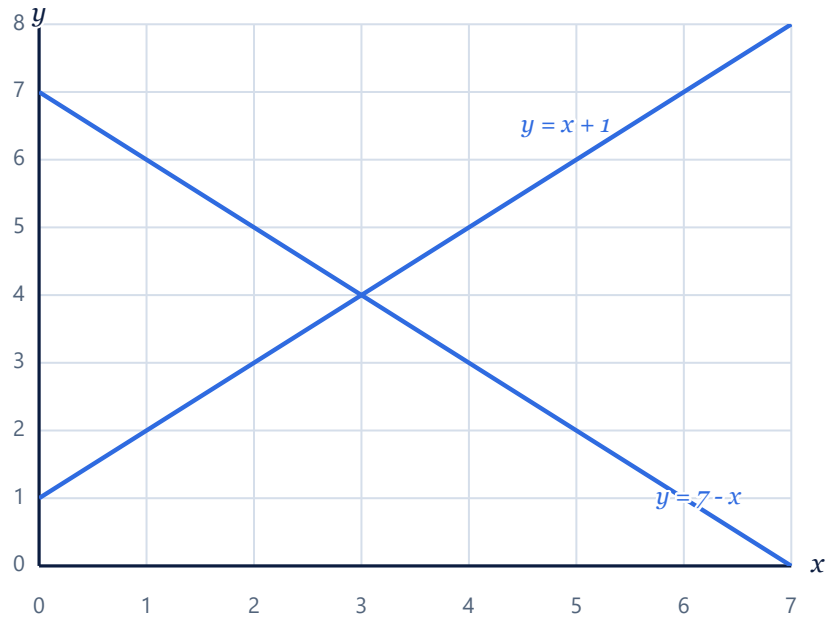
Name: _____ **Date:** _____ **Score:** _____ **/ 29**

1 The graphs of $y = x + 1$ and $y = 7 - x$ are drawn on the grid.

Use the graphs to solve the simultaneous equations

$y = x + 1$

$y = 7 - x$



(1 mark)

Answer _____

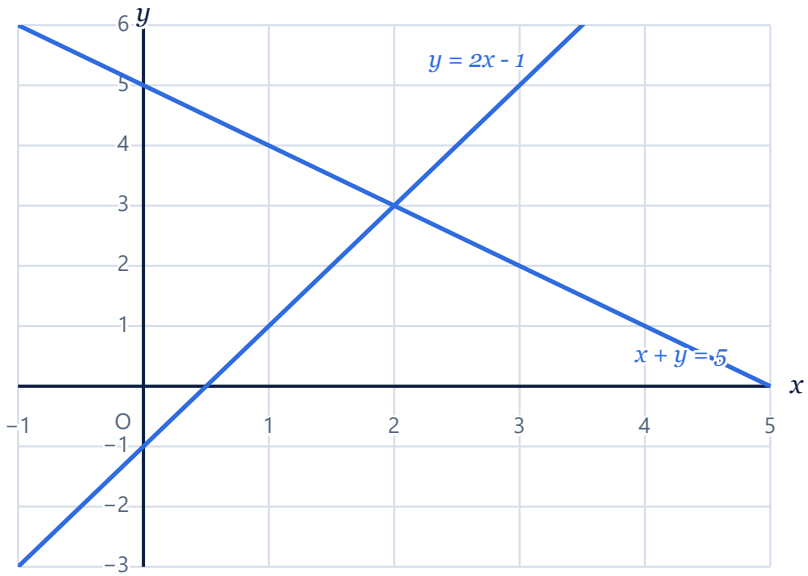
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2 The graphs of $y = 2x - 1$ and $x + y = 5$ are drawn on the grid.

Use the graphs to solve the simultaneous equations

$y = 2x - 1$

$x + y = 5$



(1 mark)

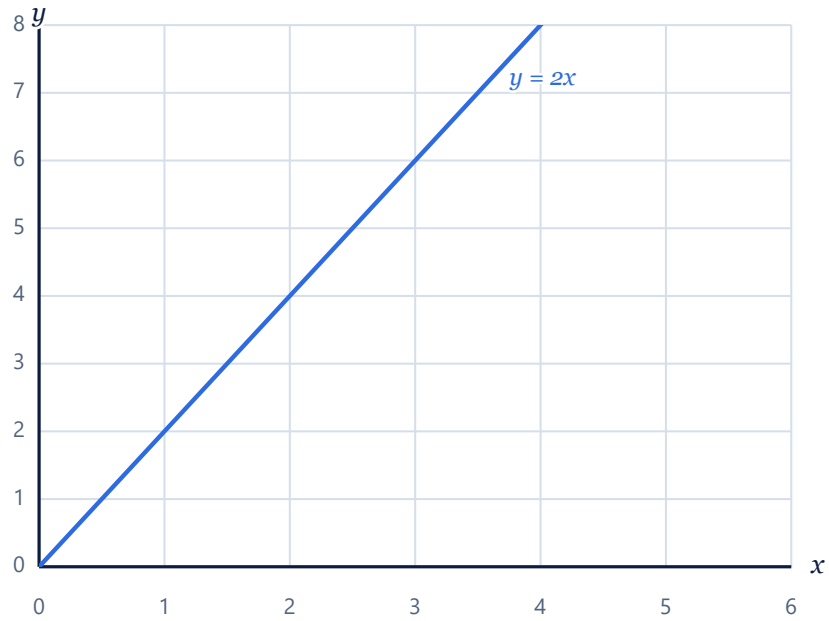
Answer _____

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3 The graph of $y = 2x$ is drawn on the grid.

a. On the same grid, draw the graph of $y = 6 - x$ for values of x from 0 to 6

b. Use your graphs to solve the simultaneous equations $y = 2x$ and $y = 6 - x$



(3 marks)

Answer _____

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4 The graph of $x + y = 10$ is drawn on the grid.

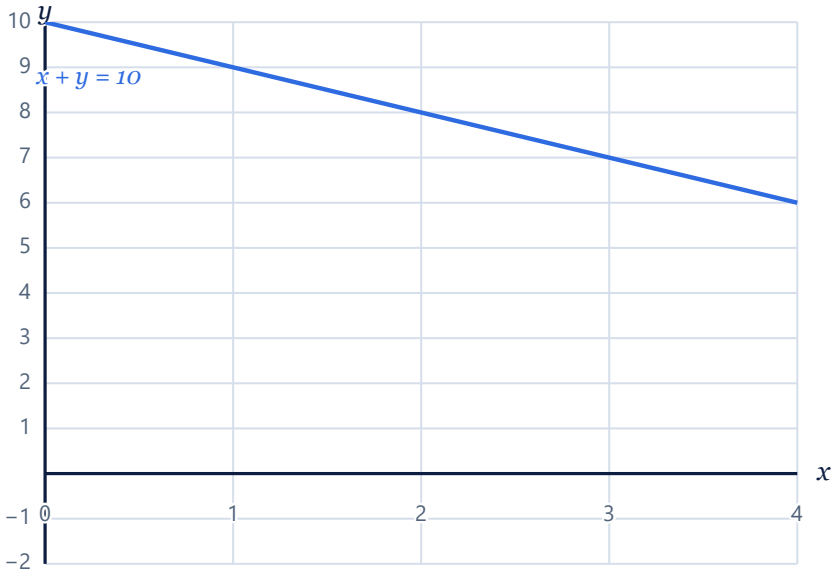
a. Complete the table of values for $y = 3x - 2$

x	0	1	2	3	4
y		1		7	

Write the missing values for $x = 0$, 2 and 4, in that order.

b. On the grid, draw the graph of $y = 3x - 2$

c. Use your graphs to solve the simultaneous equations $x + y = 10$ and $y = 3x - 2$



(4 marks)

Answer _____

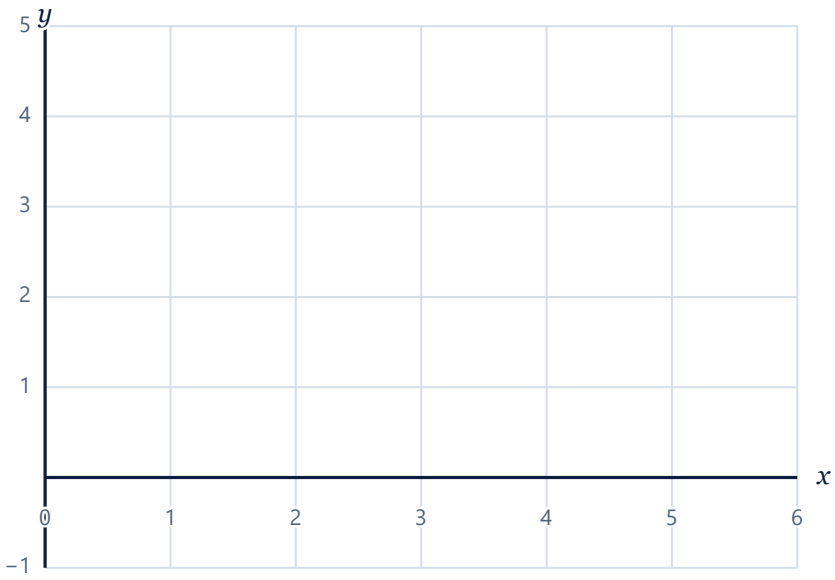
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5 a. On the grid, draw the graphs of $2x + 3y = 12$ and $y = x - 1$ for values of x from 0 to 6

b. Use your graphs to solve the simultaneous equations

$2x + 3y = 12$

$y = x - 1$



(4 marks)

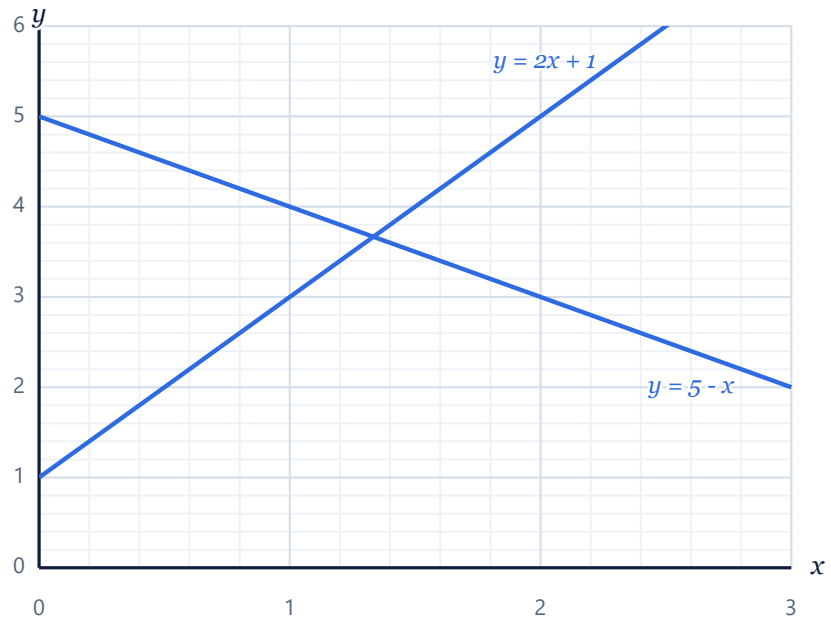
Answer _____

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6 The graphs of $y = 2x + 1$ and $y = 5 - x$ are drawn on the grid.

a. Use the graphs to estimate the solution of the simultaneous equations $y = 2x + 1$ and $y = 5 - x$. Give each value to 1 decimal place.

b. Explain why your answer to part (a) is only an estimate.



(3 marks)

Answer _____

7 Maya wants to solve these simultaneous equations by drawing their graphs.

$y = 2x + 3$

$4x - 2y = 2$

Explain why she will not find a solution.

(2 marks)

Answer _____

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8 Two taxi firms work out their prices like this.

Firm A: £3 plus £2 per mile, so $y = 2x + 3$

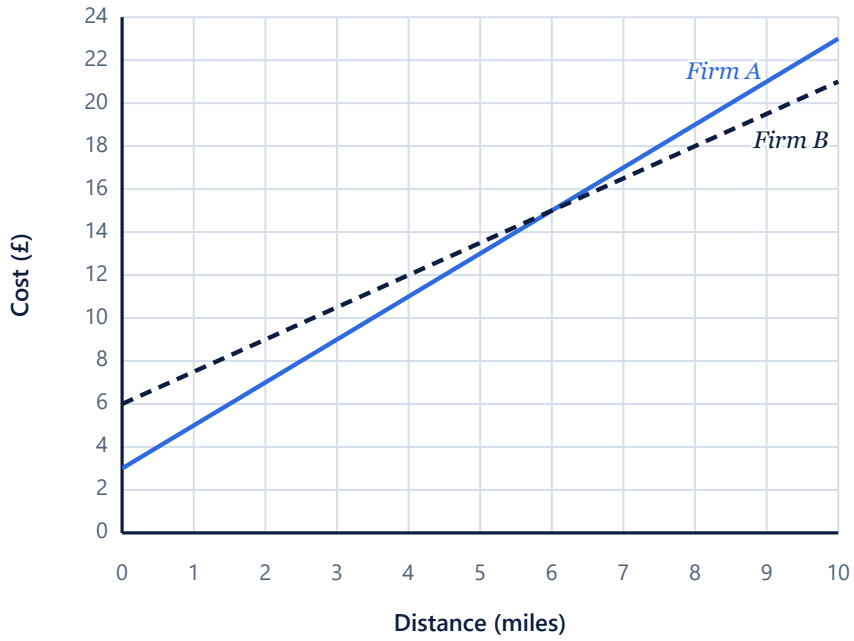
Firm B: £6 plus £1.50 per mile, so $y = 1.5x + 6$

x is the number of miles and y is the cost in pounds. The graph shows both lines.

a. For what distance do both firms charge the same?

b. What is the cost for this distance?

c. Which firm is cheaper for a 10 mile journey?



(4 marks)

Answer _____

9 Aisha says the graphs of $3x + y = 11$ and $y = 2x - 4$ cross at the point (2, 5).

a. Is Aisha correct? You must show your working.

b. Find the point where the two graphs cross.

(3 marks)

Answer _____

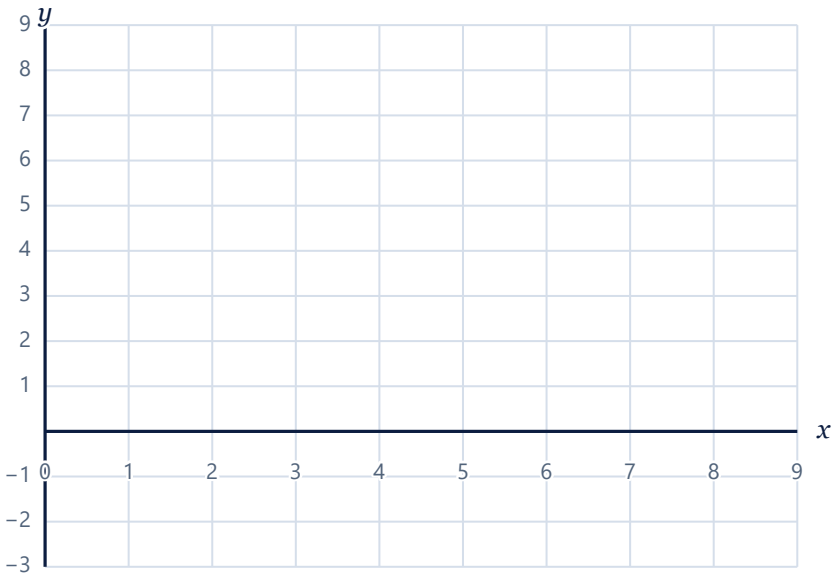
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10 Two numbers, x and y, add up to 9. Their difference, $x - y$, is 3.

a. Write down two equations in x and y.

b. On the grid, draw the graphs of your two equations for values of x from 0 to 9

c. Use your graphs to find the two numbers.



(4 marks)

Answer _____

End of questions | Total 29 marks

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