

Surname	
Other Names	
Candidate's Signature	

GCSE 9 - 1 Questions

Simultaneous Equations 2

Calculator Allowed

INSTRUCTIONS TO CANDIDATES

Write your name in the space provided.

Write your answers in the spaces provided in this question paper.

Answer ALL questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

You should have a ruler, compass and protractor where required.

Total Marks :

1) Solve the simultaneous equations

$$3x + y = 8$$

$$2x - y = 7$$

A solution by trial and improvement will not be accepted.

Answer _____ [2]

2) Solve the simultaneous equations $4x - 2y = 19$

$$2x - 2y = 9$$

Show all working

Answer $x = \underline{\quad}$ $y = \underline{\quad}$ [2]

- 3) Solve the following simultaneous equations using an algebraic (not graphical) method. You must show all your working. [4]

$$4x - 3y = 11$$

$$6x - 2y = 9$$

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4) Use an algebraic method to solve the following simultaneous equations.

[4]

$$\begin{aligned}5a + 7b &= 63 \\10a - 4b &= 18\end{aligned}$$

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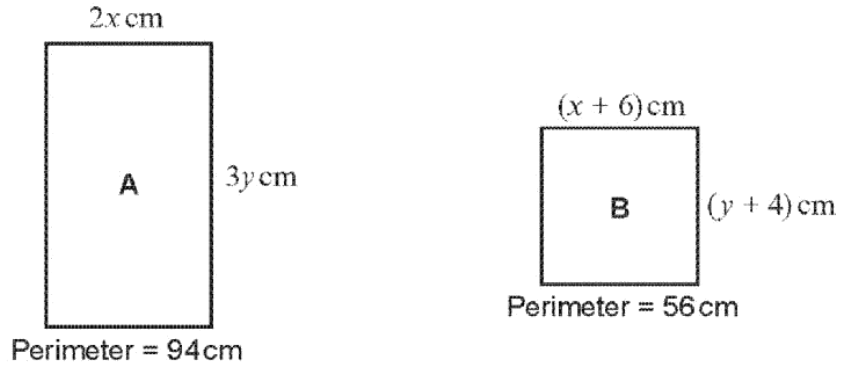
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5) The rectangles **A** and **B** have perimeters of 94cm and 56cm as shown below.



Diagrams not drawn to scale

Use an algebraic method to calculate the area of each rectangle.

[8]

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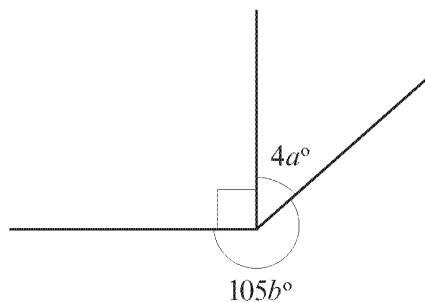
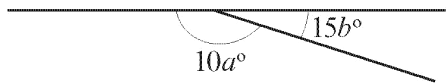
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6)



Diagrams not drawn to scale

Use an algebraic method to calculate the values of a and b .

[6]

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$a =$

$b =$

- 7) Glyn employs two people, Ben and Ceri.
Ben and Ceri are paid at different hourly rates.

Glyn has recorded how many hours Ben and Ceri have worked on Monday and Tuesday. He has also recorded the total amount he has paid out in wages.

Day	Number of hours worked		Total pay (£)
	Ben	Ceri	
Monday	6	5	116
Tuesday	4	8	138

Use an algebraic method to calculate how much Ben and Ceri are paid per hour. [6]

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Ben is paid £ per hour

Ceri is paid £ per hour

- 8) A shop sells thin edging strips to place around rectangular tiles.
The cost of edging a tile on display is £10.
The cost of edging a tile that is three times as long and twice as wide as the tile on display is £27.
Calculate the cost of the edging along each length and along each width of the tile on display.
You must use an algebraic method.

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Cost of edging each length £

Cost of edging each width £

[6]

9) The Davies family want to buy some garden furniture. Their local garden centre stocks the particular brand they would like.

The price of one garden bench and four chairs is £310.
The price of two garden benches and three chairs is £345.

The Davies family have £450 available to spend.

Do they have enough money to buy two garden benches and five chairs?

You must show all your working.

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- 10) Simon and Syra are on holiday in Devon.
They buy some holiday souvenirs for their friends.
Simon pays £2.05 for 2 key rings and 3 pencils.
Syra pays £3.20 for 3 key rings and 5 pencils.
All the key rings are the same price and all the pencils are the same price.

Find the individual prices of a key ring and a pencil.
You must use an algebraic method.

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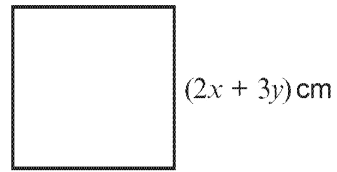
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Price of a key ring =

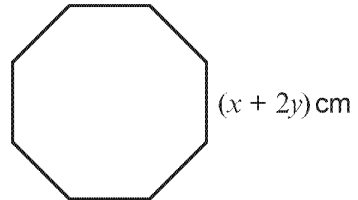
Price of a pencil =

11) *In this question you will be assessed on the quality of your organisation, communication and accuracy in writing.*

Each side of a square is of length $(2x + 3y)$ cm.
The perimeter of the square is 62 cm.



Each side of a regular octagon is of length $(x + 2y)$ cm.
The perimeter of the octagon is 72 cm.



Use an algebraic method to find the value of x and the value of y .

[5 + 2 OCW]

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$x =$ $y =$