

## Non-Calculator

Q1.

Solve  $x - 3 = 0$

Circle your answer.

$x = -3$

$x = 0$

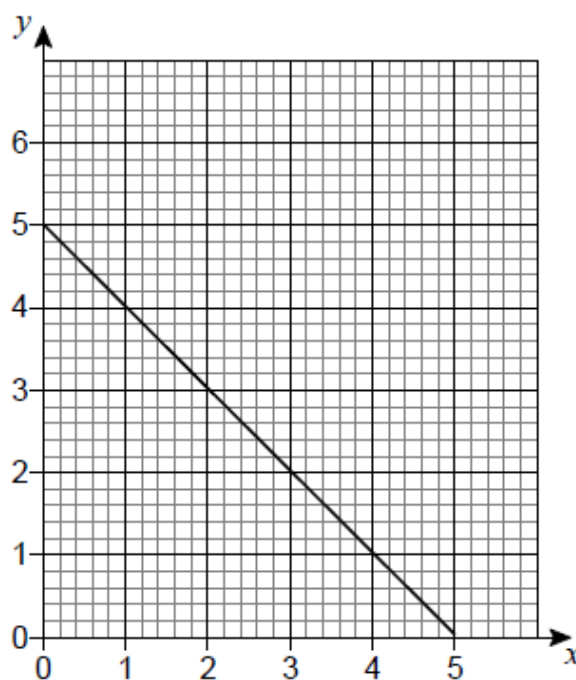
$x = \frac{1}{3}$

$x = 3$

(Total 1 mark)

Q2.

Here is the graph of  $y = 5 - x$  for values of  $x$  from 0 to 5



(a) On the same grid, draw the graph of  $y = x + 1$  for values of  $x$  from 0 to 5

(2)

(b) Use the graphs to solve the simultaneous equations

$$y = 5 - x \text{ and } y = x + 1$$

$x =$  \_\_\_\_\_

$y =$  \_\_\_\_\_

(1)

(Total 3 marks)



Q4.

Solve the simultaneous equations

$$2x - 3y =$$

$$24 \quad 6x + 2y$$

Do not use trial and improvement.

You must show your working.

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Answer \_\_\_\_\_

(Total 3 marks)

Q5.

Solve the simultaneous equations.

$$2x + 3y = 10$$

$$4x - y = -1$$

Do not use trial and improvement.

You must show your working.

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Answer \_\_\_\_\_

(Total 3 marks)

Q6.

Solve the simultaneous equations.

$$2x + 3y = 53$$

$$3x - y = 19$$

Do not use trial and improvement.

You must show your working.

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$$x = \text{-----}, y = \text{-----}$$

(Total 4 marks)

Q7.

$$2x + 3y = 15.5$$

$$x + y = 6$$

Work out the values of  $x$  and  $y$ .

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$$x = \text{-----}$$

$$y = \text{-----}$$

(Total 3 marks)

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Q8.

A bag contains only blue and green counters. If there were three times as many blue counters and the original number of green counters, the total number of counters in the bag would be 62.

If there were twice as many green counters and the original number of blue counters, the total number of counters in the bag would be 59.

How many of each colour are in the bag?

Do not use trial and improvement.

You must show your working.

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Answer blue \_\_\_\_\_, green \_\_\_\_\_

(Total 4 marks)

Q9.

Solve the simultaneous equations

$$5x - 4y = 24$$

$$x + 2y = 9$$

You must show your working.

Do not use trial and improvement.

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Answer  $x =$  \_\_\_\_\_,  $y =$  \_\_\_\_\_

(Total 3 marks)

Q10.

Solve the simultaneous equations.

$$2x + y = 18$$

$$x - y = 6$$

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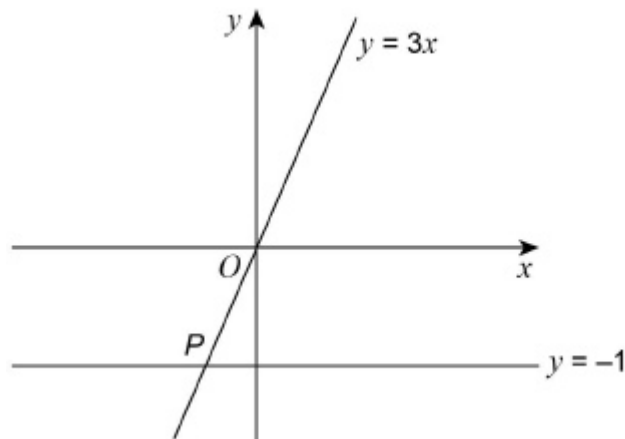
Answer \_\_\_\_\_

(Total 3 marks)

### Calculator

Q11.

Two straight lines intersect at point  $P$ .



Not drawn accurately

Circle the coordinates of  $P$ .

$(-3, -1)$

$\left(-1, -\frac{1}{3}\right)$

$(-1, -3)$

$\left(-\frac{1}{3}, -1\right)$

(Total 1 mark)

Q12.

3 fence panels and 4 posts cost £82.97

5 fence panels and 6 posts cost £131.95

Rav builds fences.

He says,

“£200 should be enough for 8 panels and 9 posts”

Is he correct?

You must show your working.

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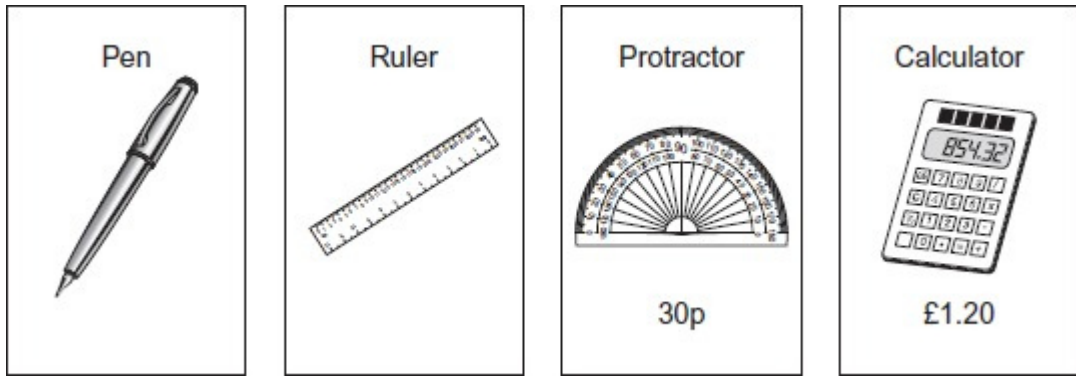
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(Total 6 marks)

Q13.

A school shop sells these items.



- (a) Write an expression for the cost of  $y$  protractors and  $w$  calculators.  
Give your answer in pence.

Answer \_\_\_\_\_ pence

(2)

- (b) Two pens and one ruler cost £2.65  
One pen and five rulers cost £2

Work out the cost of one pen and the cost of one ruler.

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Cost of one pen £ \_\_\_\_\_

Cost of one ruler £ \_\_\_\_\_

(4)

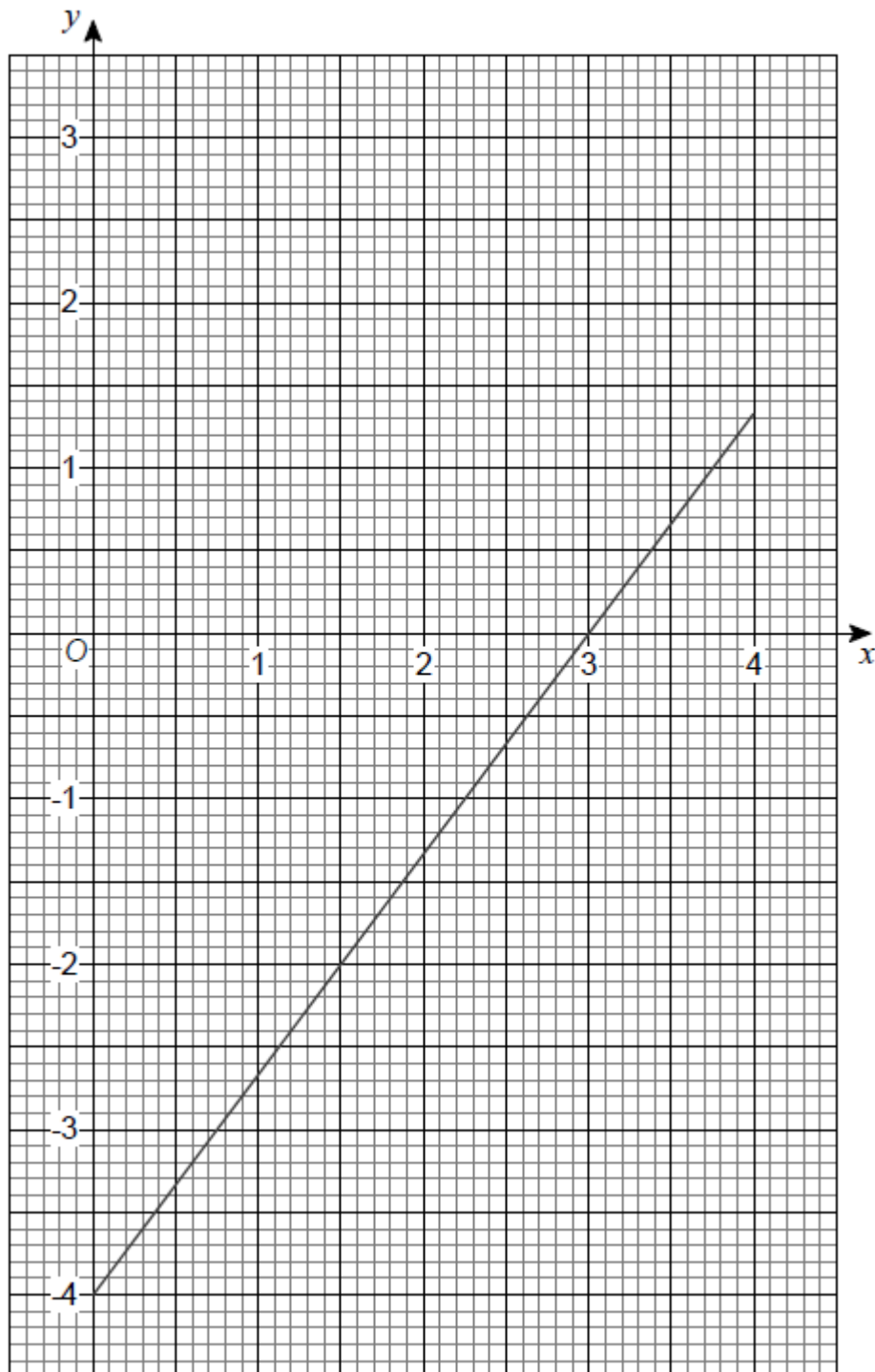
(Total 6 marks)





Q15.

Here is the graph of  $4x - 3y = 12$  for values of  $x$  from 0 to 4



By drawing a second graph on the grid,  
work out an approximate solution to the simultaneous equations

$$4x - 3y = 12 \text{ and } 3x + 2y = 6$$

Answer \_\_\_\_\_

(Total 3 marks)

Q16.

This is a formula for the time to cook a turkey.

$$T = 15 + 20m$$

This is a formula for the time to cook a goose.

$$T = 40 + 15m$$

$m$  is the mass in kilograms.  $T$  is the time in minutes.

Work out this time.

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Answer \_\_\_\_\_ minutes  
(Total 4 marks)

Q17.

Solve the simultaneous equations

$$3x + 2y = 10$$

$$3x - y = 13$$

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Answer  $x = \dots\dots\dots y = \dots\dots\dots$   
(Total 3 marks)

