Non-Calculator

Q1.

Solve $x - 3 = 0$

Circle your answer.

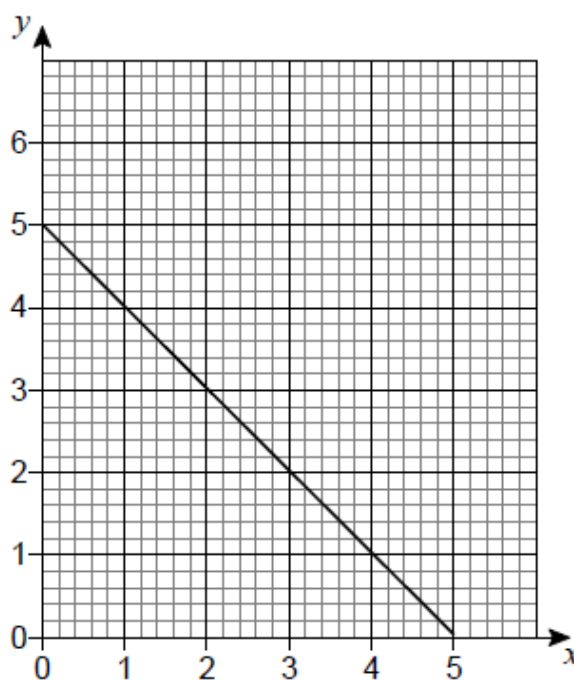$x = -3$ $x = 0$ $x = \dfrac{1}{3}$ $x = 3$

(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

$y = 5 - x$ and $y = x + 1$

$x = $ _____

$y = $ _____

(1)

(Total 3 marks)

Q3.

Solve the simultaneous equations

$$5x + 6y = 3$$

$$2x - 3y = 12$$

Do **not** use trial and improvement.

You **must** show your working.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____

(Total 3 marks)

Q4.

Solve the simultaneous equations

$$2x - 3y = 24$$

$$6x + 2y = -5$$

Do **not** use trial and improvement.
You **must** show your working.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

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.

_____

_____

_____

_____

_____

_____

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.

_____

_____

_____

_____

_____

_____

_____

_____

$x = $ _____ , $y = $ _____

(Total 4 marks)

Q7.

$$2x + 3y = 15.5$$

$$x + y = 6$$

Work out the values of x and y.

_____

_____

_____

_____

_____

_____

$x = $ _____

$y = $ _____

(Total 3 marks)

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.

_____

_____

_____

_____

_____

_____

_____

_____

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.

_____

_____

_____

_____

_____

Answer $x =$ _____, $y =$ _____

(Total 3 marks)

AQA GCSE Maths - Simultaneous Equations (F)   *PhysicsAndMathsTutor.com*

Q10.

Solve the simultaneous equations.

$$2x + y = 18$$
$$x - y = 6$$

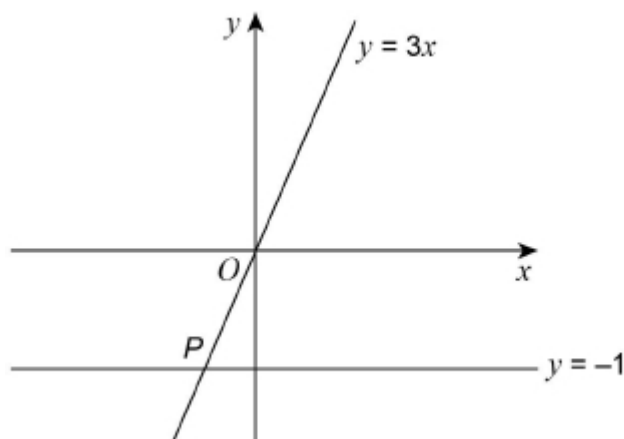_____

_____

_____

_____

_____

_____

_____

_____

Answer _____

(Total 3 marks)

Calculator

Q11.

Two straight lines intersect at point *P*.

Circle the coordinates of *P*.

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

(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.
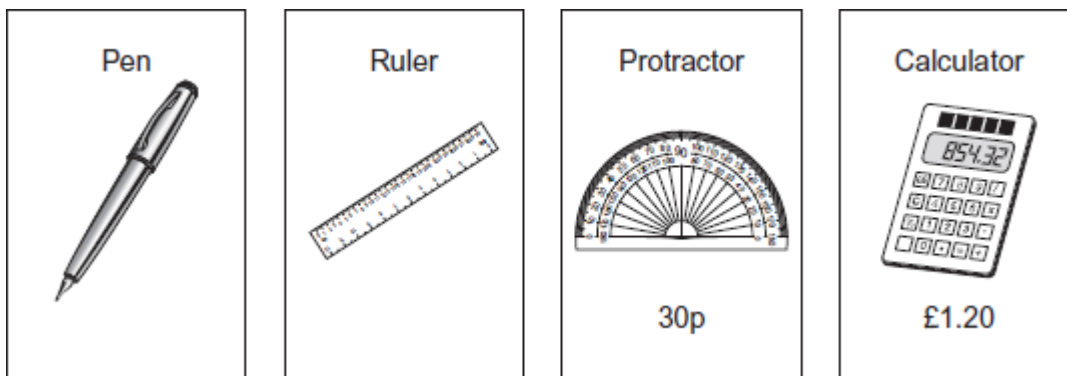
He says,

"£200 should be enough for 8 panels and 9 posts"

Is he correct?
You **must** show your working.

_____

_____

_____

_____

_____

_____

_____

(Total 6 marks)

Q13.

A school shop sells these items.

Pen	Ruler	Protractor	Calculator
		30p	£1.20

(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.

_____

_____

_____

_____

_____

_____

Cost of one pen £ _____

Cost of one ruler £ _____

(4)
(Total 6 marks)

Q14.

3 kg of apples and 1.5 kg of blackberries cost £ 9.00
2 kg of apples and 4 kg of blackberries cost £ 13.20

Work out the cost of 1 kg of apples and the cost of 1 kg of blackberries.
You **must** show your working.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

1 kg of apples   £ _____

1 kg of blackberries £ _____
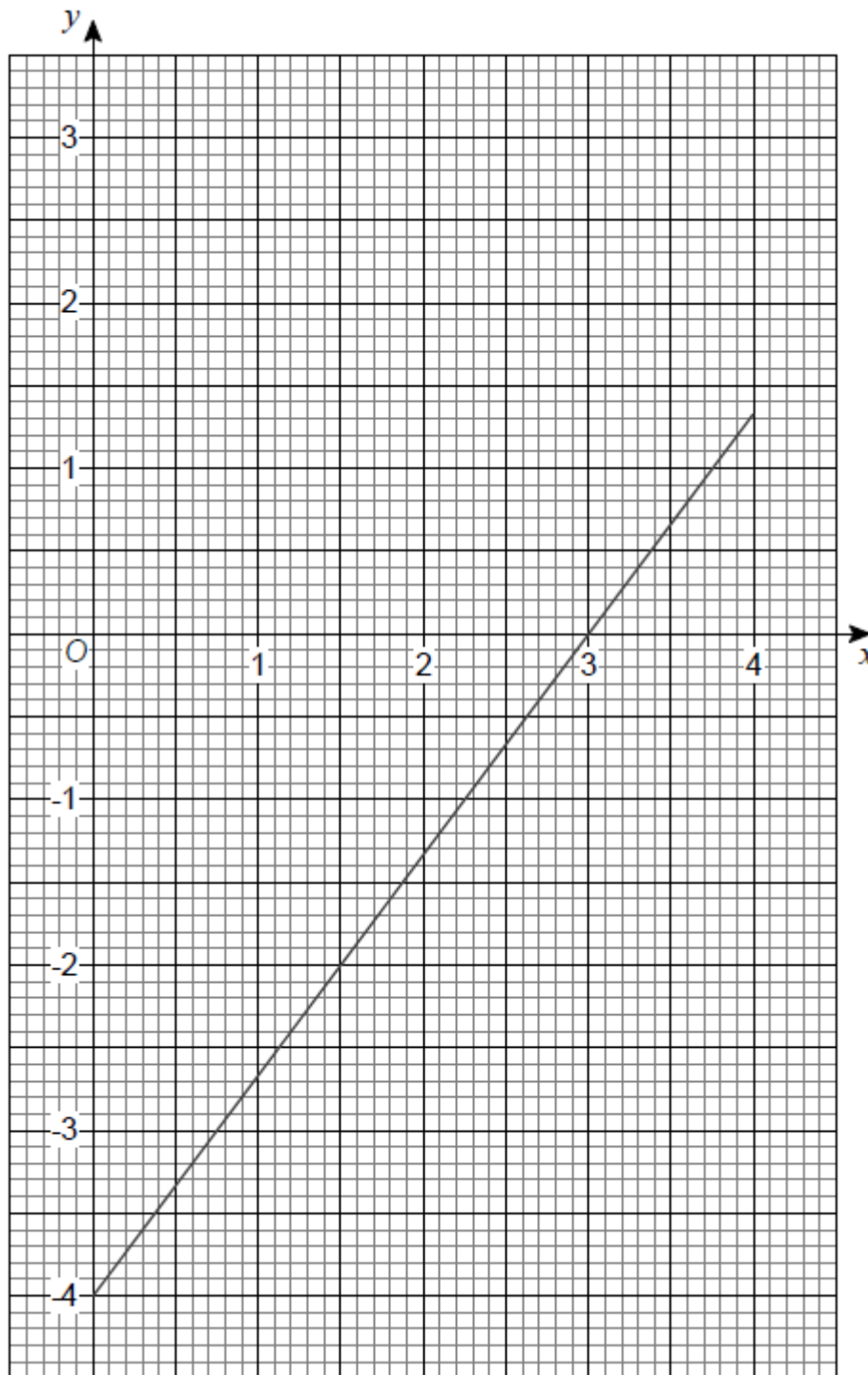
(Total 5 marks)

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

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

Answer _____

(Total 3 marks)

Q16.

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

$T = 15 + 20\,m$

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

$T = 40 + 15\,m$

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

Work out this time.

_____

_____

_____

_____

_____

_____

Answer _____ minutes

(Total 4 marks)

Q17.

Solve the simultaneous equations
$3x + 2y = 10$
$3x - y = 13$

_____

_____

_____

_____

_____

_____

Answer x = ... y = ...

(Total 3 marks)

AQA GCSE Maths - Simultaneous Equations (F)   *PhysicsAndMathsTutor.com*

Q18.

At a concert

       3 adult and 4 child tickets cost £23

       1 adult and 5 child tickets cost £15

Work out the cost of an adult ticket and the cost of a child ticket.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Cost of an adult ticket £ ....

Cost of a child ticket £ ....

(Total 4 marks)