Solutions

Edexcel GCSE
Mathematics (Linear) – 1MA0

SOLVNG SIMULTANEOUS EQUATIONS GRAPHICALLY

Materials required for examination
Ruler graduated in centimetres and
millimetres, protractor, compasses,
pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions

Use black ink or ball-point pen.
Fill in the boxes at the top of this page with your name, centre number and candidate number.
Answer all questions.
Answer the questions in the spaces provided – there may be more space than you need.
Calculators may be used.

Information

The marks for each question are shown in brackets – use this as a guide as to how much time to spend on **each** question.
Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.
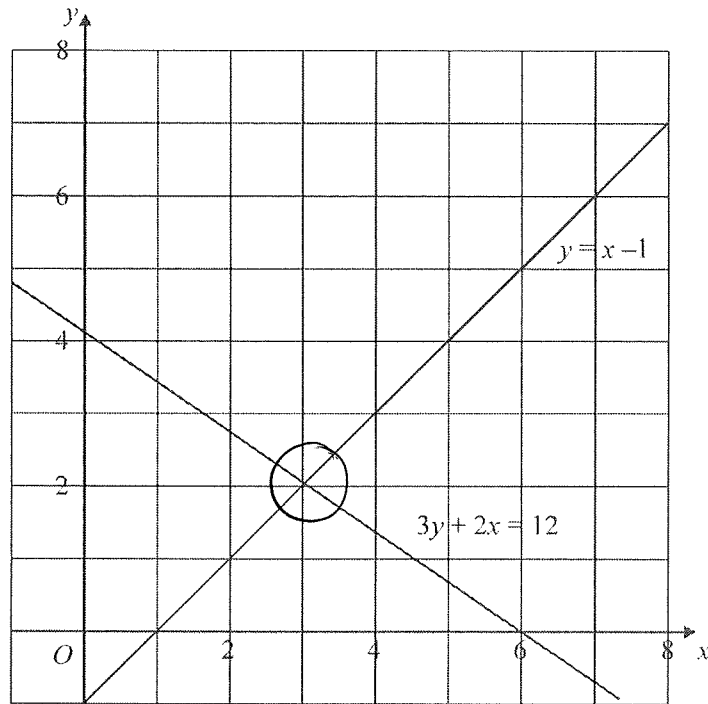
Advice

Read each question carefully before you start to answer it.
Keep an eye on the time.
Try to answer every question.
Check your answers if you have time at the end.

1. The graphs of the straight lines with equations $3y + 2x = 12$ and $y = x - 1$ have been drawn on the grid.

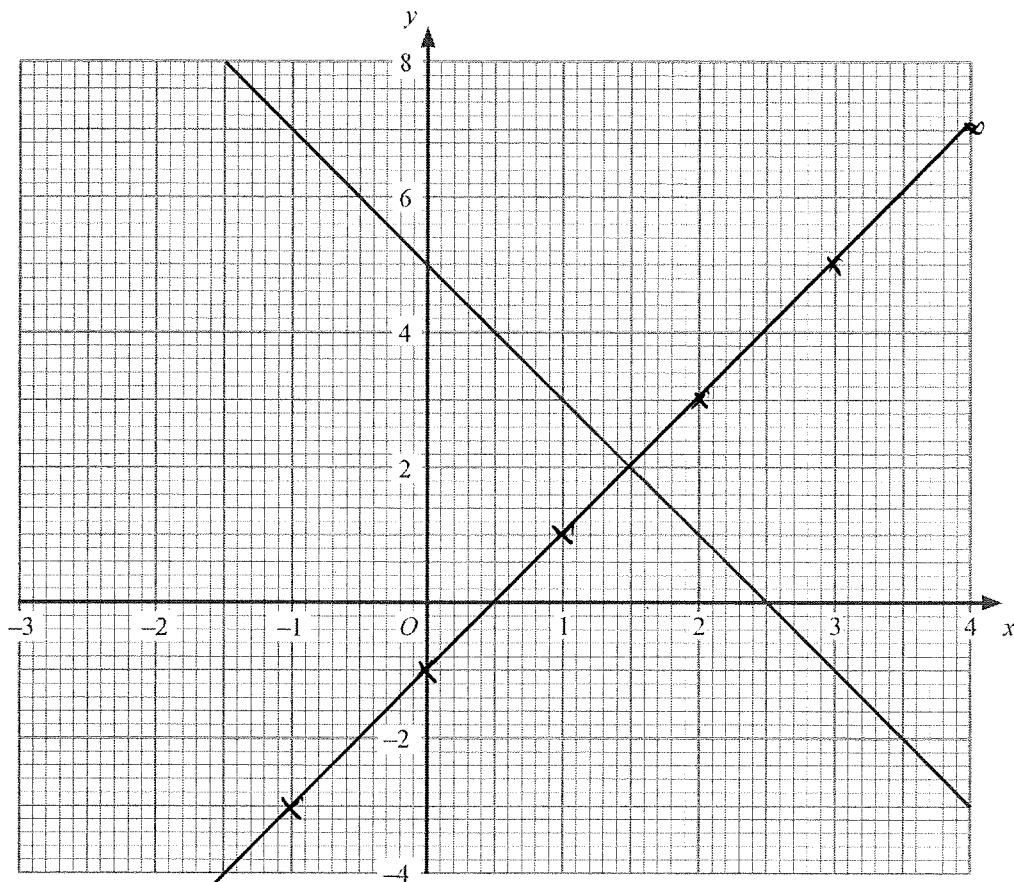Use the graphs to solve the simultaneous equations

$3y + 2x = 12$
$y = x - 1$

$x = $ ....3...............

$y = $ ....2...............

(2)

(Total 2 marks)

2. The straight line $y + 2x = 5$ has been drawn on the grid.

(a) Complete this table of values for $y = 2x - 1$

x	−1	0	1	2	3	4
y	−3	−1	1	3	5	7

(2)

(b) On the grid, draw the graph of $y = 2x - 1$

(2)

(c) Use your diagram to solve the simultaneous equations
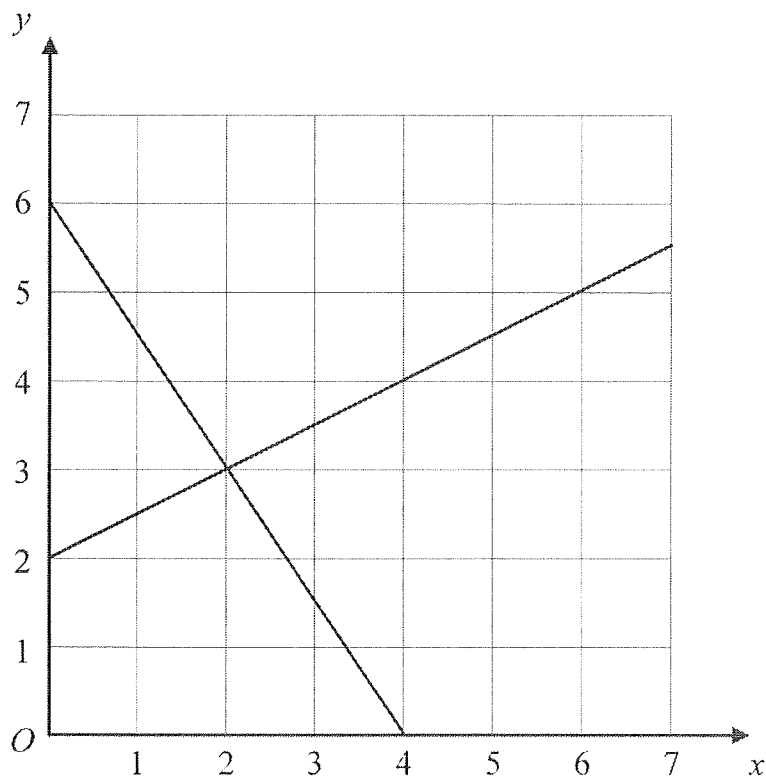
$$y + 2x = 5$$

$$y = 2x - 1$$

$x = $ 1.5

$y = $ 2

(2)

(Total 6 marks)

3.

The diagram shows graphs of $y = \dfrac{1}{2}x + 2$

and $2y + 3x = 12$

(a)   Use the diagram to solve the simultaneous equations

$$y = \dfrac{1}{2}x + 2$$

$$2y + 3x = 12$$

$x = \underline{\quad 2 \quad}$ $y = \underline{\quad 3 \quad}$
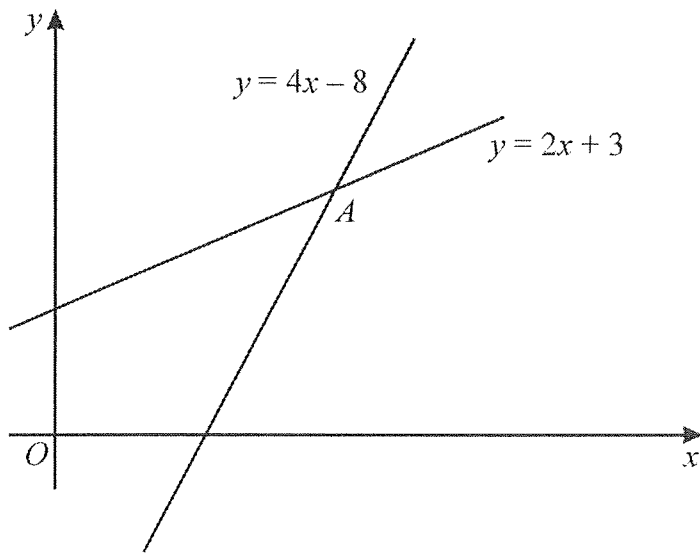
(2)

(Total 2 marks)

4.

Diagram **NOT** accurately drawn

The diagram shows two straight lines intersecting at point A.
The equations of the lines are

$$y = 4x - 8$$
$$y = 2x + 3$$

Work out the coordinates of A.

$4x - 8 = 2x + 3$

$(-2x)$ $2x - 8 = 3$

$(+8)$ $2x = 11$

$x = 5.5$

Substituting in

$y = 2 \times 5.5 + 3$

$y = 11 + 3$

$y = 14$

(....5.5...., ...14....)

(Total 3 marks)