



Bishops Online Tutoring



Education Consultancy

Edexcel GCSE Mathematics

SOLVING SIMULTANEOUS EQUATIONS GRAPHICALLY

Materials Required:

- Pen
- HB Pencil
- Ruler (in centimetres and millimetres)
- Protractor
- Compass

Instructions:

- Use a black ink pen to answer all questions
 - Fill your name in the section below
- Answer the questions in the spaces provided
 - Show your working out for all answers

Information:

- The marks allocated for each question are displayed within brackets – utilise this information to gauge the appropriate amount of time to dedicate to each question
- Questions marked with an asterisk (*) will assess your written communication; be careful of spelling, punctuation and grammar with these questions

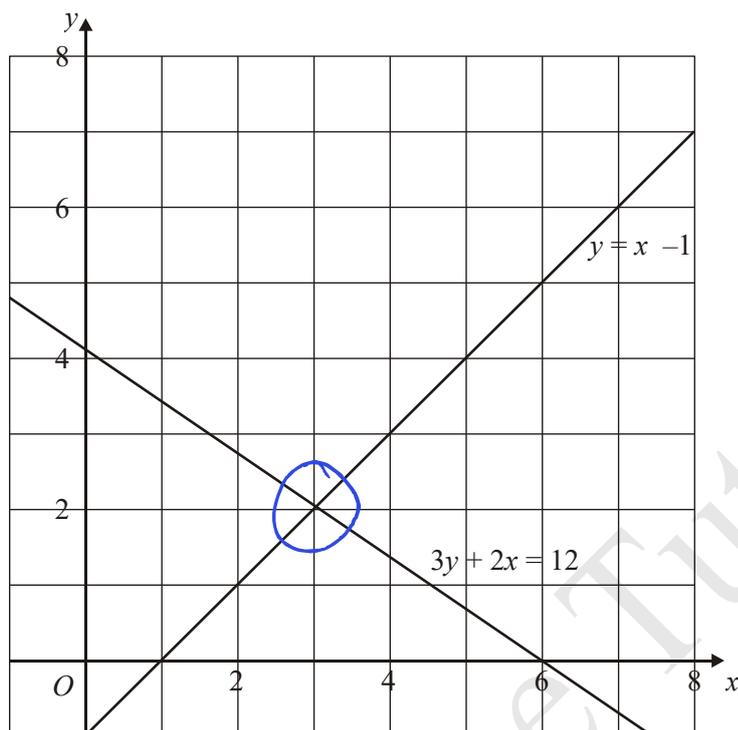
Advice:

- Carefully read the question before attempting to answer it
- Be vary of time and try to answer every question
- If you have enough time in the end, go back and check your answers. A good way to check your answers is to retry the question with the hope of getting the same answer as before without looking at your working out from before

NO CALCULATOR ALLOWED

NAME:

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

$$3y + 2x = 12$$

$$y = x - 1$$

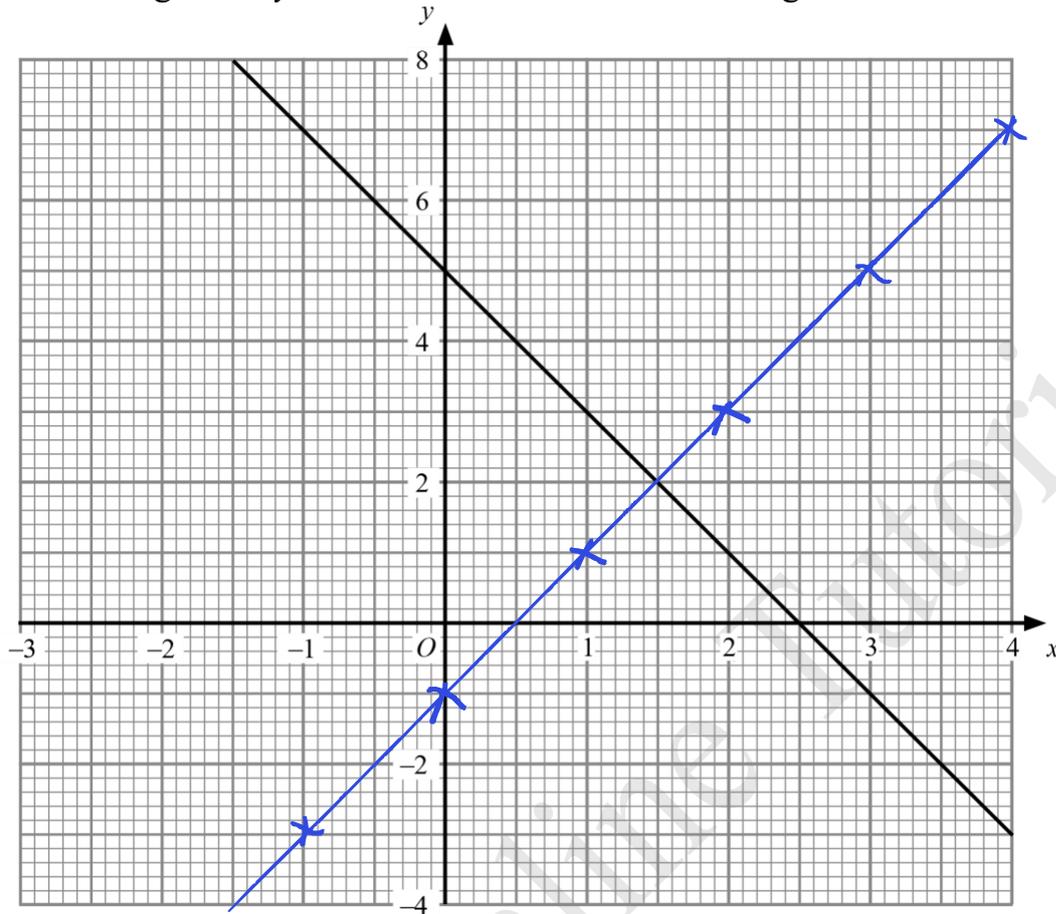
$$x = \dots\dots\dots 3 \dots\dots\dots$$

$$y = \dots\dots\dots 2 \dots\dots\dots$$

(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

$$y + 2x = 5$$

$$y = 2x - 1$$

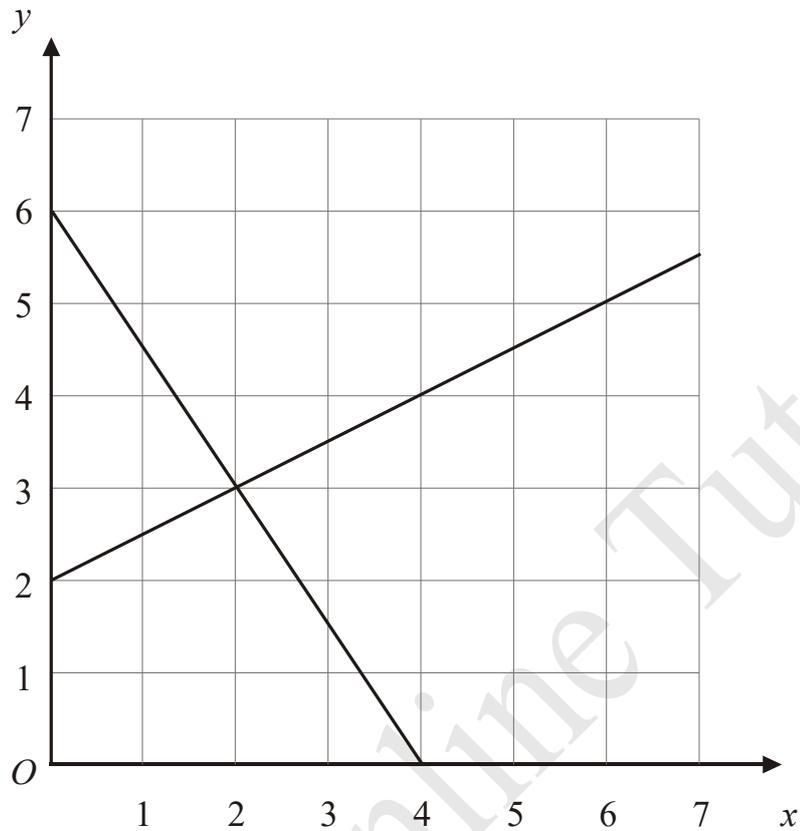
$$x = \dots\dots\dots 1.5 \dots\dots\dots$$

$$y = \dots\dots\dots 2 \dots\dots\dots$$

(2)

(Total 6 marks)

3.



The diagram shows graphs of $y = \frac{1}{2}x + 2$
and $2y + 3x = 12$

(a) Use the diagram to solve the simultaneous equations

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

$$2y + 3x = 12$$

$$x = \dots\dots\dots 2 \dots\dots\dots y = \dots\dots\dots 3 \dots\dots\dots$$

(2)
(Total 2 marks)

4.

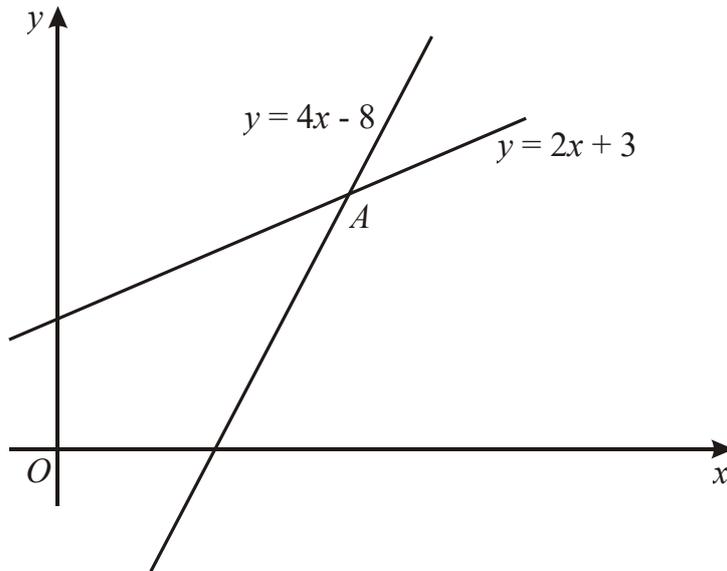


Diagram **NOT** accurately drawn

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 .

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

$$\textcircled{-2x} \quad 2x - 8 = 3$$

$$\textcircled{+8} \quad 2x = 11$$

$$x = 5.5$$

$$(\dots 5.5 \dots, \dots 14 \dots)$$

(Total 3 marks)

Substituting in:

$$y = 2(5.5) + 3$$

$$y = 11 + 3$$

$$y = 14$$