



## Programme 4 Worksheet 1: Programme Questions

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Answer the following questions while you watch the programme.

1. What is mobile phone Deal A?

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2. When Katie is investigating the mobile phone deals, what does she record on the  $x$ -axis and on the  $y$ -axis?

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3. What is the general equation of a straight line?

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4. What is the equation of the line for Deal A?

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5. What is the gradient of the line for Deal B?

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6. Which deal is cheaper if you only make 10 minutes of calls per week?

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7. At what rate does water empty from Ben's bath?

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8. What is the registration number on Katie's Mustang?

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9. How much petrol does each car have at the start of the test?

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10. What set of  $x$  values did Katie choose to plot in 'Tick or Trash'?

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## Programme 4 Worksheet 2: Tick or Trash

Here are some questions and answers (by Students A and B) on straight-line graphs.  
Decide which answers to Tick (correct) and which to Trash (incorrect). Give reasons.

### Question 1

(a) Make a table of values for  $y = 6 - 2x$ .

<b>x</b>	
<b>y</b>	

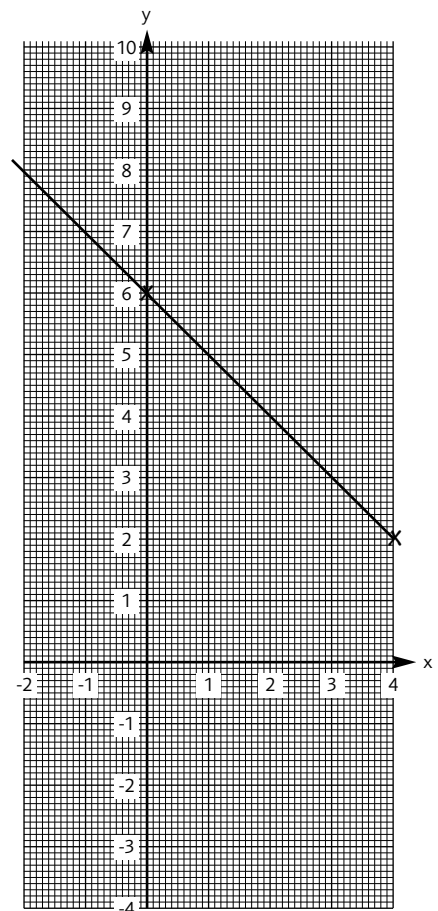
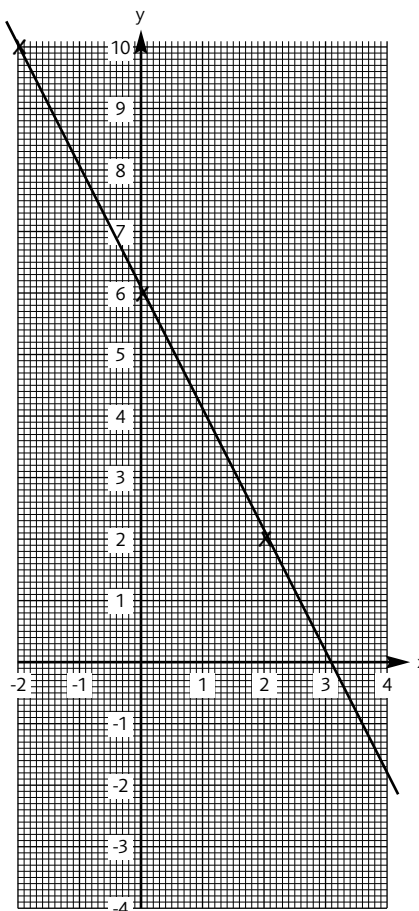
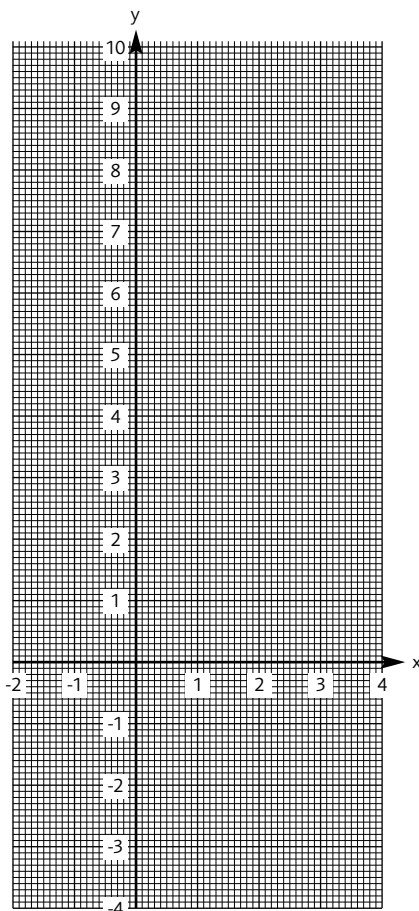
(b) Draw the graph of  $y = 6 - 2x$  on the grid below.

**Student A Answer**

<b>x</b>	-2	0	2
<b>y</b>	10	6	2

**Student B Answer**

<b>x</b>	0	4
<b>y</b>	6	2

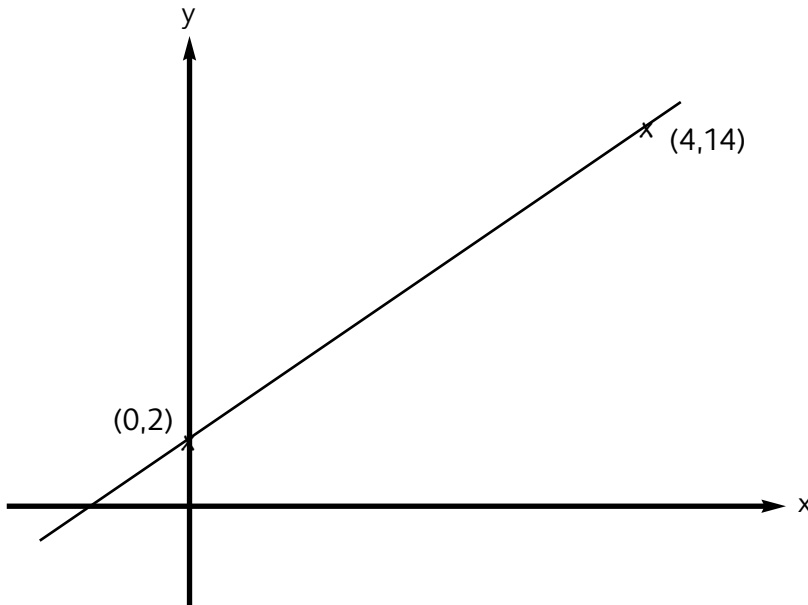




Programme 4 Worksheet 2: Tick or Trash

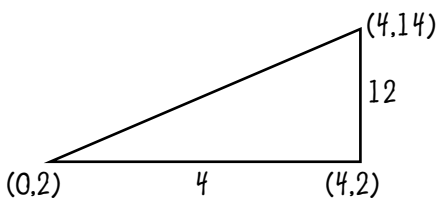
Question 2

Write down the equation of the straight line shown here.



Student A Answer

Equation of a line is  $y = mx + c$   
 $c$  is the  $y$ -intercept so  $c = 2$   
 $m$  is the gradient



Line goes across 4 and up 12  
 $m = (\text{vertical change}) \div (\text{horizontal change})$   
 $= \frac{12}{4}$   
 $= 3$

The equation of the line is  
 $y = 3x + 2$

Student B Answer

To find the gradient  
 Change in  $x$  direction  $= 4 - 2$   
 $= 2$   
 Change in  $y$  direction  $= 14 - 2$   
 $= 12$   
 $\text{gradient} = (\text{change in } y) \div (\text{change in } x)$   
 $= \frac{12}{2}$   
 $= 6$

The line crosses the  $y$  axis at  $(0, 2)$

Equation of the line is  
 $y = 6x + 2$   
 Check: when  $x = 0, y = 2$   
 since  $2 = 6 \times 0 + 2$  correct



**Programme 4** Worksheet 3: Exam Practice Questions (Edexcel)

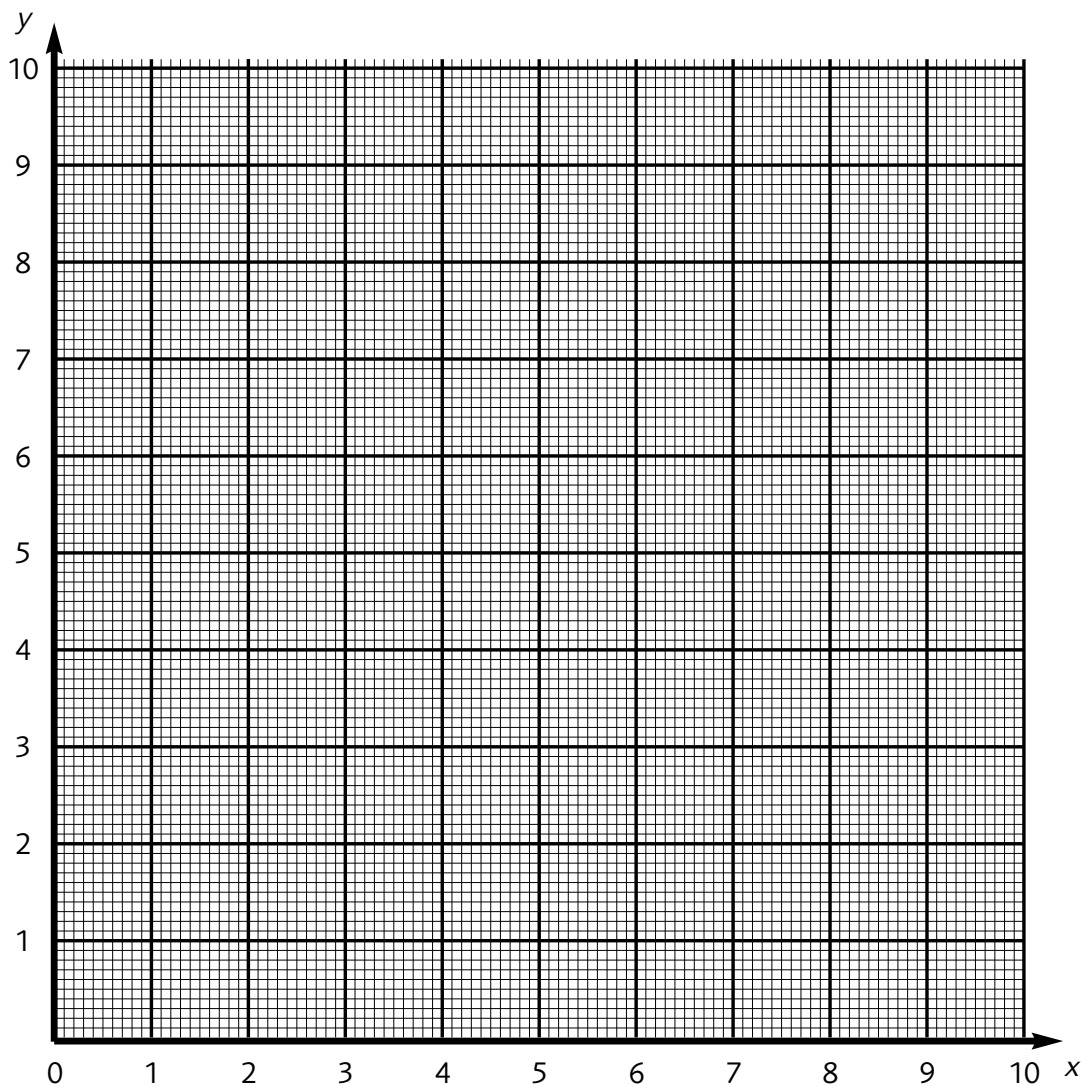
**Question 1**

National Curriculum Reference: A3c

November 1997

Paper 3

- (a)** Make  $y$  the subject of the equation  $x + 2y = 6$
- (b)** On the grid, draw the line with equation  $x + 2y = 6$



- (c)** On the grid, shade the region for which  $x + 2y \leq 6$ ,  $0 \leq x \leq 4$  and  $y \geq 0$ .

[6]



## Programme 4 Worksheet 3: Exam Practice Questions (Edexcel)

### Question 2

National Curriculum Reference: A3d

November 1997

Paper 4

(a) On the grid, draw the graphs of

i)  $x + y = 4$

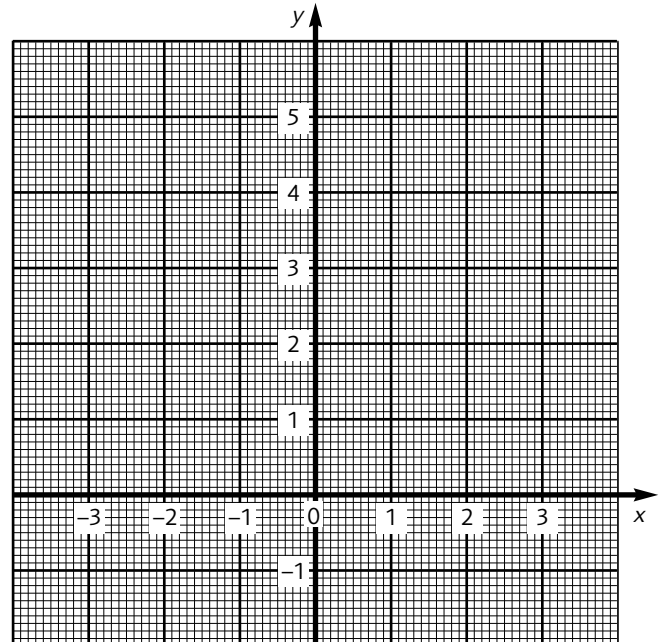
ii)  $y = x + 2$

(b) Use the graphs to solve the simultaneous equations

$$x + y = 4$$

$$y = x + 2$$

[4]



### Question 3

National Curriculum Reference: A3d

June 1998

Paper 4

The line with equation  $3y = -2x + 6$  has been drawn on the grid.

(a) Draw the graph of  $y = 2x - 2$  on the same grid. (2 marks)

(b) Use the graphs to find the solution of the simultaneous equations

$$3y = -2x + 6$$

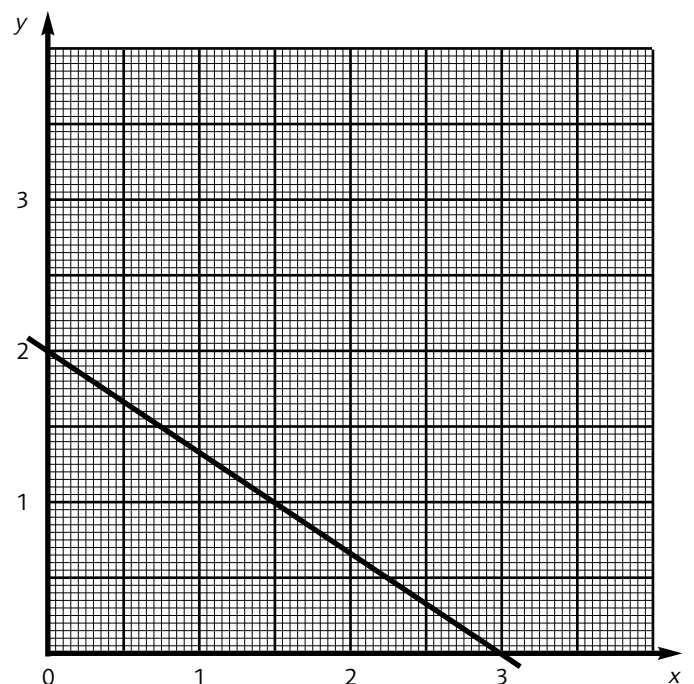
$$y = 2x - 2 \quad (2 \text{ marks})$$

A line is drawn parallel to  $3y = -2x + 6$  through the point (2,1).

(c) Find the equation of this line.

(2 marks)

[6]





**Programme 4** Worksheet 3: Exam Practice Questions (Edexcel)

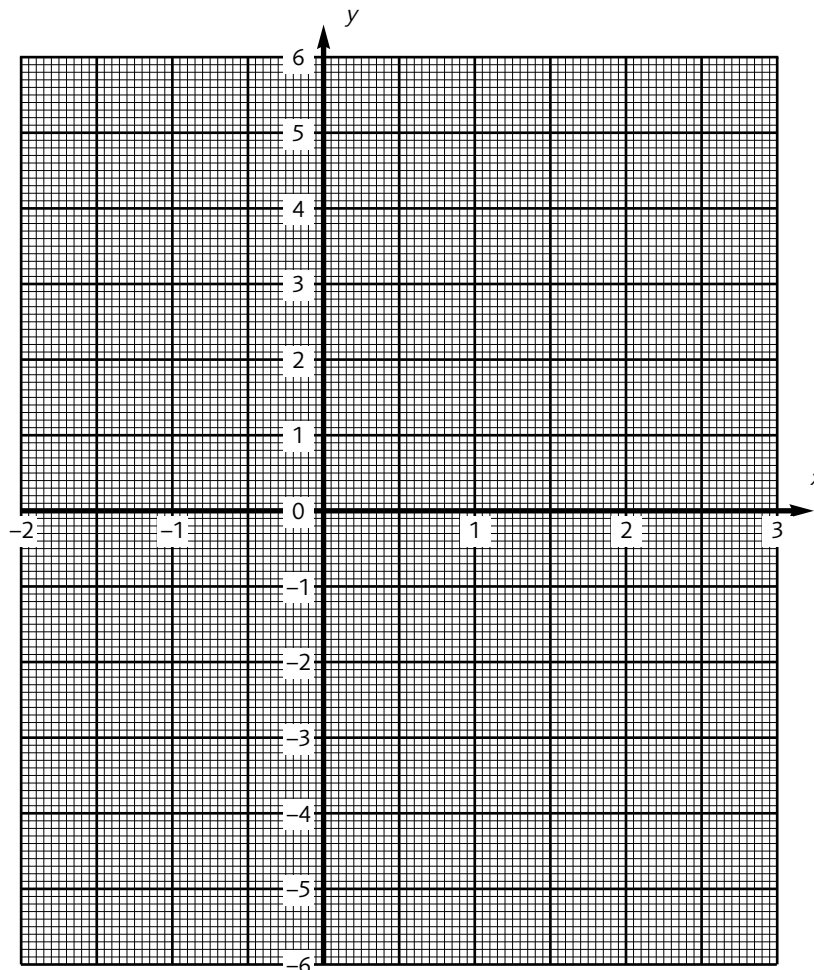
**Question 4**

National Curriculum Reference: A2d      November 1998      Paper 4

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

$x$	-2	-1	0	1	2	3
$y$						

**(b)** Draw the graph of  $y = 2x - 1$ . (2 marks)



**(c)** Use your graph to find  
 i) the value of  $y$  when  $x = -1.4$   
 ii) the value of  $x$  when  $y = 3.8$  (2 marks)

[6]



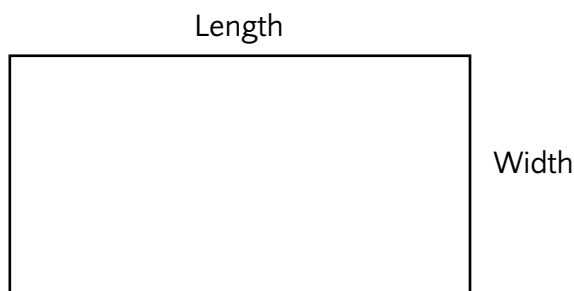
**Programme 4** Worksheet 3: Exam Practice Questions (Edexcel)

**Question 5**

National Curriculum Reference: A2d      June 1997      Paper 1

The width of the rectangle is  $x$  cm.

The length of the rectangle is 4 cm more than the width.



**(a)** Write down an expression in terms of  $x$  for the length of the rectangle.

The perimeter of the rectangle is  $P$  cm.

**(b)** Write down a formula for  $P$  in terms of  $x$ .

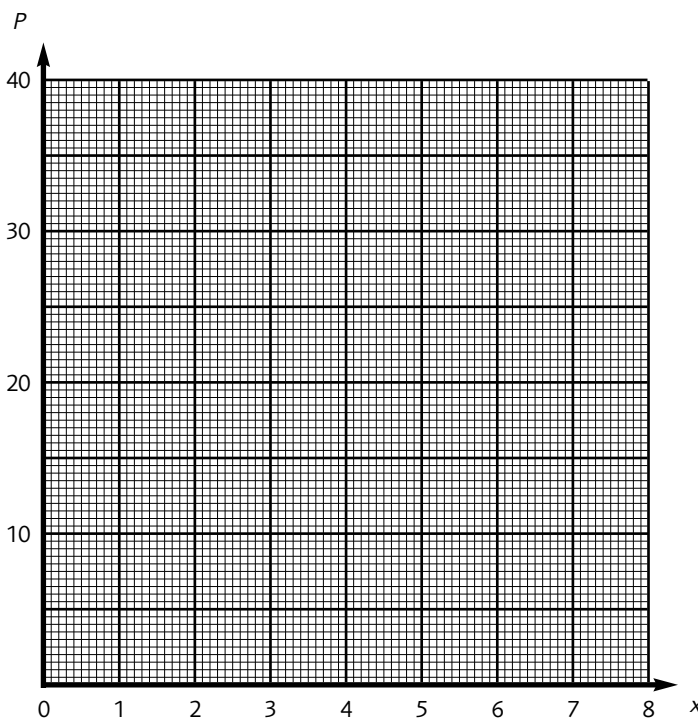
$x$	2	4	6	8
$P$			32	

The table gives the value of  $P$  when  $x = 6$ .

**(c)** Complete the table for  $x = 2, 4$  and  $8$ .

**(d)** On the grid below draw the graph of  $P$  against  $x$  for values of  $x$  from 2 to 8.

[6]





## Programme 4 Worksheet 3: Exam Practice Questions (Edexcel)

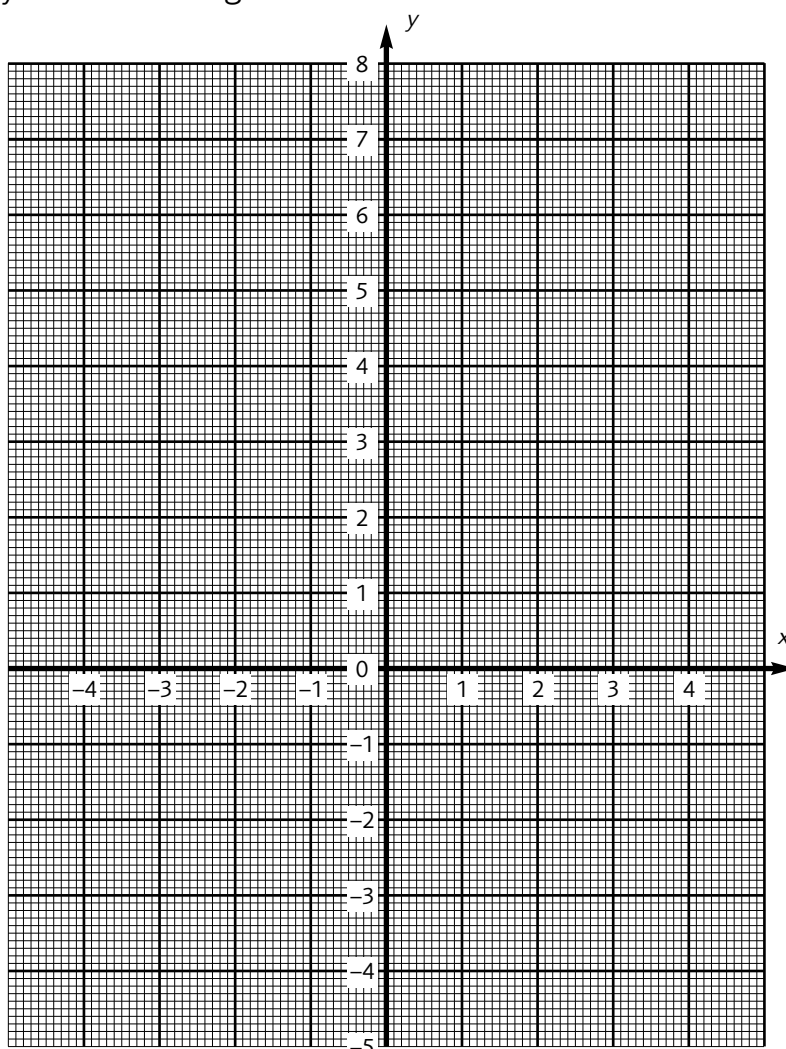
### Question 6

National Curriculum Reference: A2d      June 1999      Paper 2

**(a)** Complete this table of values for  $y = 2x + 3$ . (2 marks)

$x$	-3	-2	-1	0	1	2
$y$		1				

**(b)** Draw the graph of  $y = 2x + 3$  on the grid below. (2 marks)



**(c)** Use your graph to find

- i)** the value of  $y$  when  $x = 1.5$
- ii)** the value of  $x$  when  $y = -0.5$

(2 marks)

[6]

Total = 34