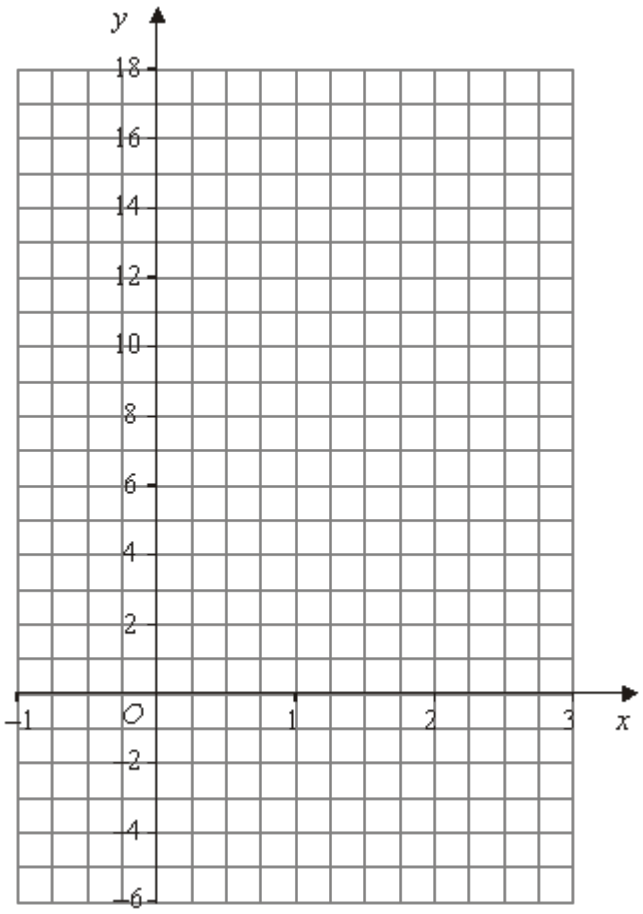
Q1. (a) Complete the table of values for $y = 5x + 1$

x	−1	0	1	2	3
y		1			16

(2)

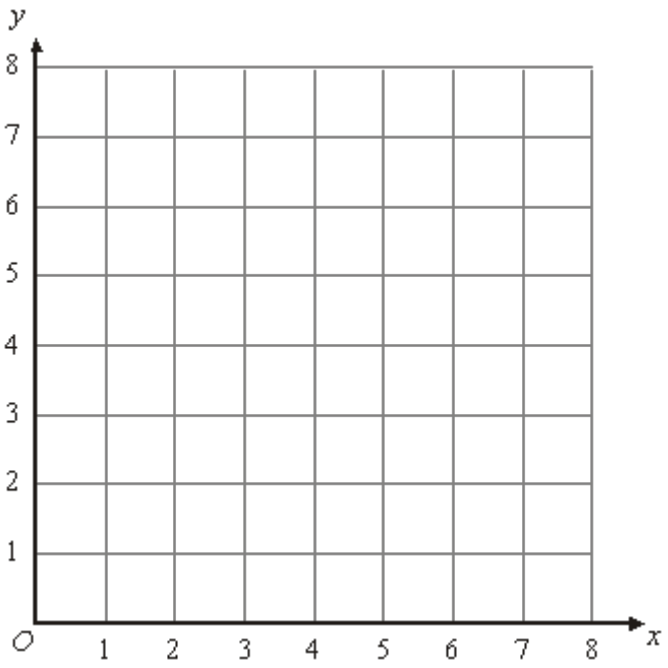
(b) On the grid, draw the graph of $y = 5x + 1$



(2)
(Total 4 marks)

Q2. On the grid, draw the graph of $x + y = 6$

Use values of x from $x = 0$ to $x = 6$



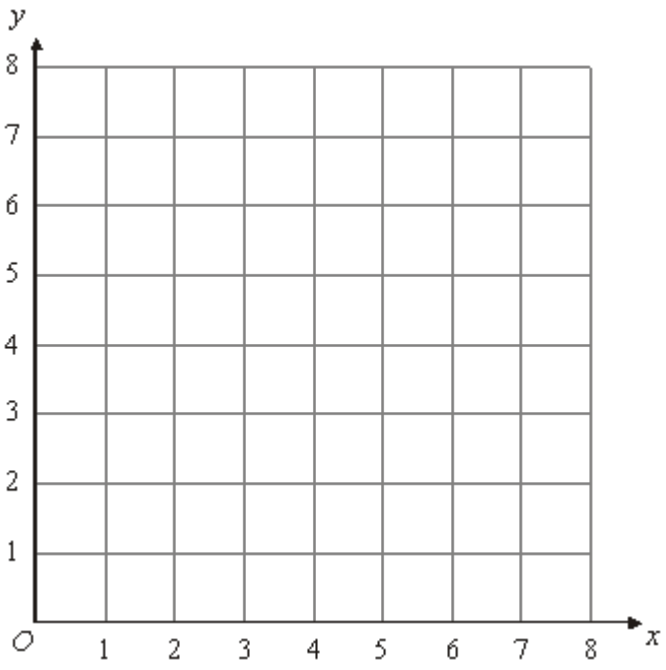
(Total 3 marks)

Q3. (a) Complete the table of values for $x + y = 6$

x	0	1	2	3	4	5
y		5			2	

(2)

(b) On the grid, draw the graph of $x + y = 6$



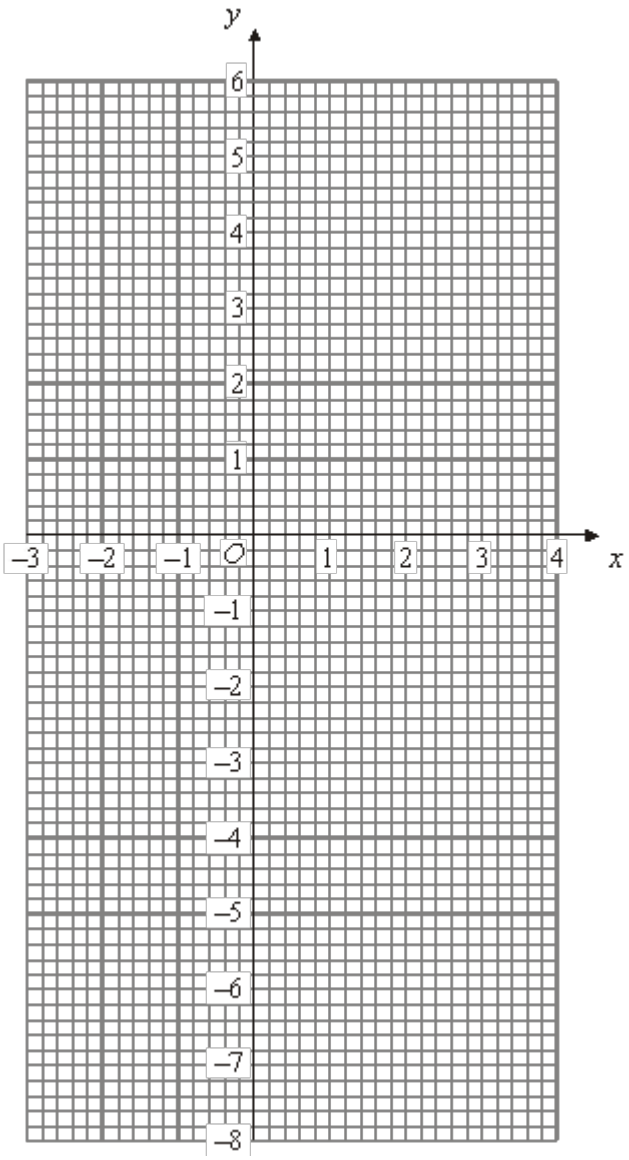
(2)
(Total 4 marks)

Q4. (a) Complete the table of values for $y = 2x - 3$

x	−2	−1	0	1	2	3
y	−7		−3	−1		3

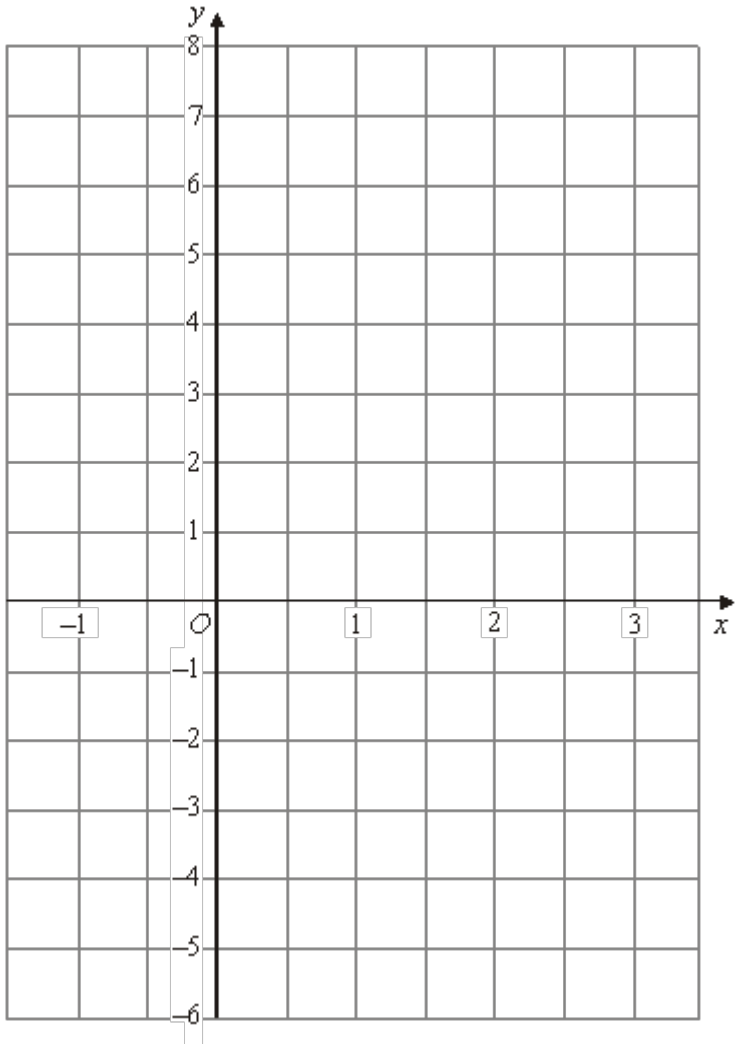
(2)

(b) On the grid, draw the graph of $y = 2x - 3$



(2)
(Total 4 marks)

Q5. Draw the graph of $y = 3x - 2$ for values of x from –1 to 3.



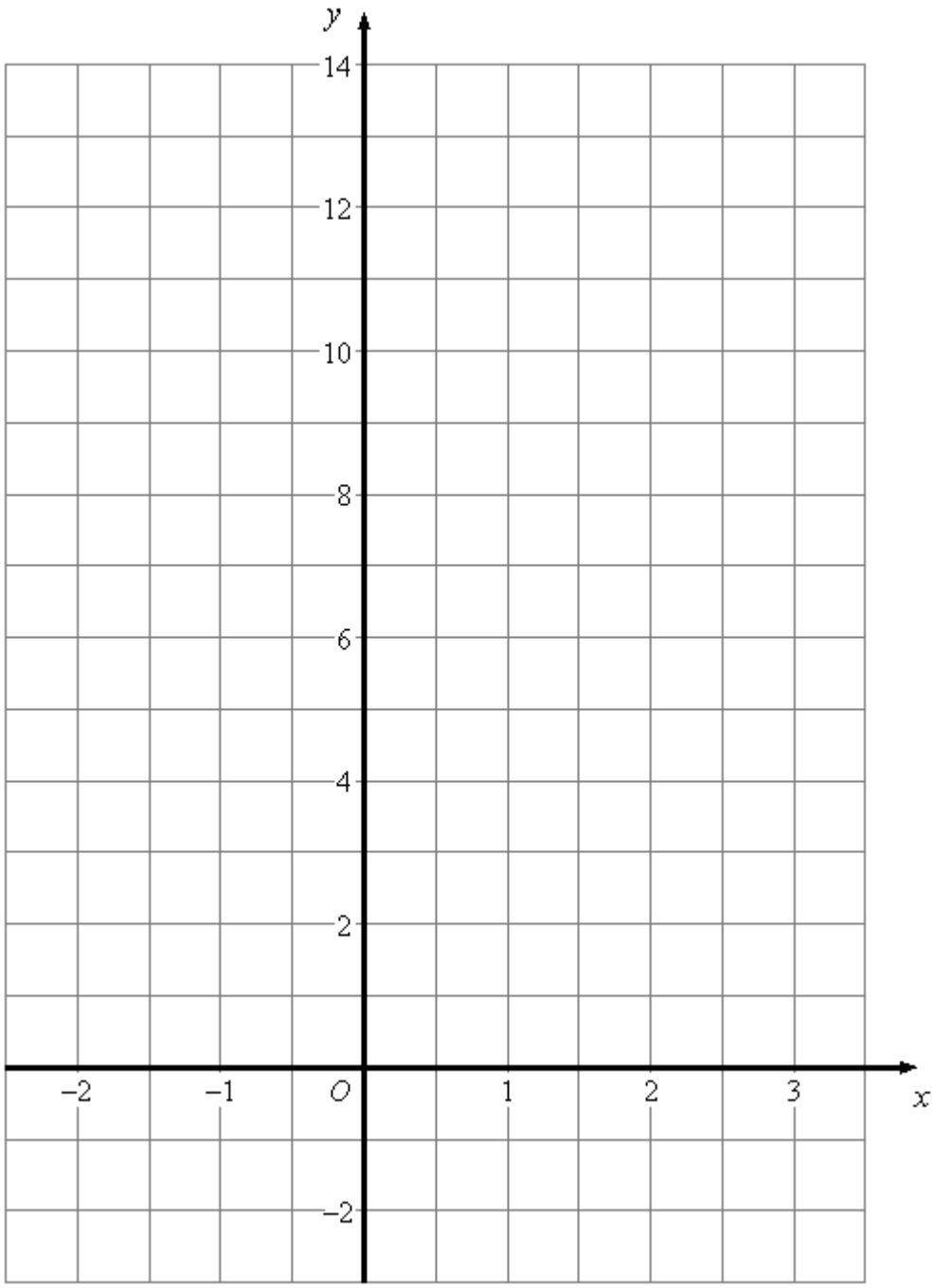
(Total 3 marks)

Q6. (a) Complete the table of values for $y = 3x + 4$

x	–2	–1	0	1	2	3
y		1				13

(2)

(b) On the grid, draw the graph of $y = 3x + 4$



(2)
(Total 4 marks)

Q7. (a) Write down the equation of a straight line that is parallel to $y = 5x + 6$

.....

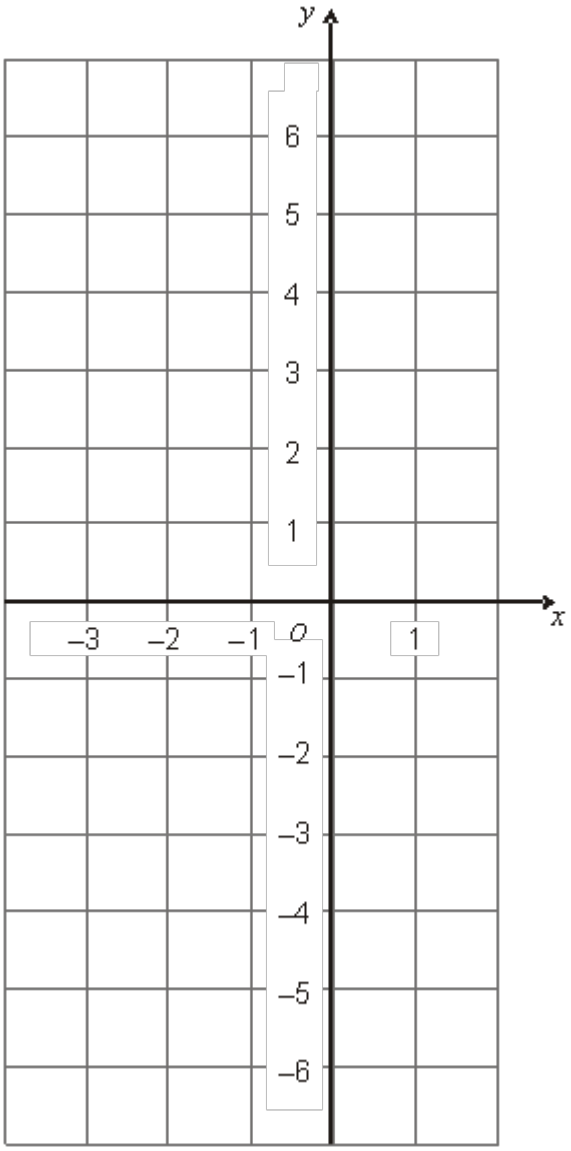
(1)

(b) Find an equation of the line that is perpendicular to the line $y = 5x + 6$ and passes through the point (–2, 5).

.....

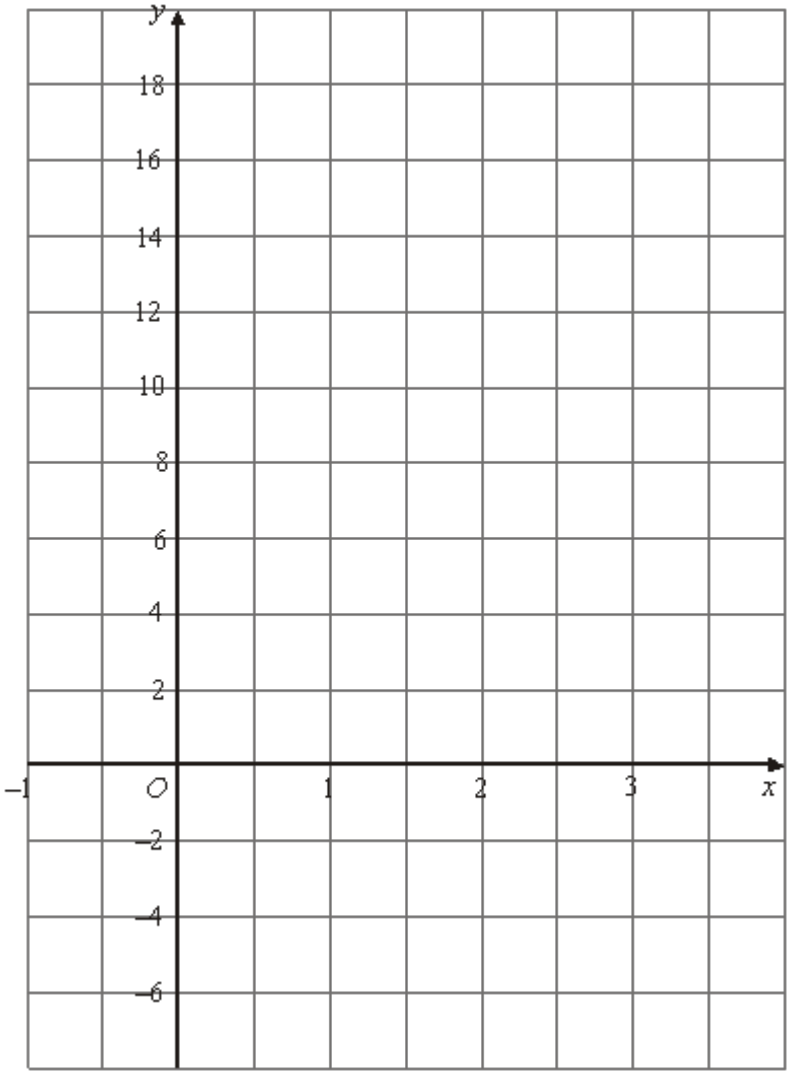
(3)
(Total 4 marks)

Q8. On the grid, draw the graph of $y = 2x + 3$ for values of x from $x = –3$ to $x = 1$



(Total 3 marks)

Q9. On the grid, draw the graph of $y = 5x + 1$ from $x = -1$ to $x = 3$

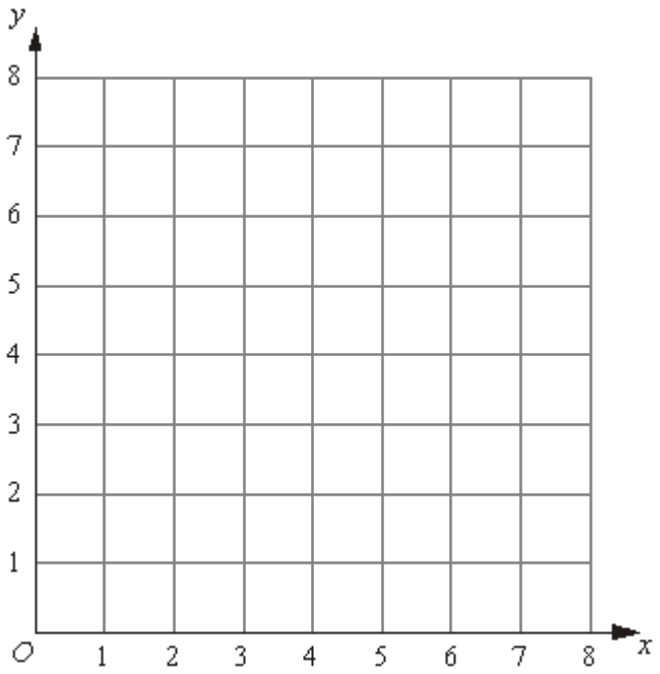


(Total 3 marks)

Q10. The region **R** satisfies the inequalities

$x \geq 2, y \geq 1, x + y \leq 6$

On the grid below, draw straight lines and use shading to show the region **R**.



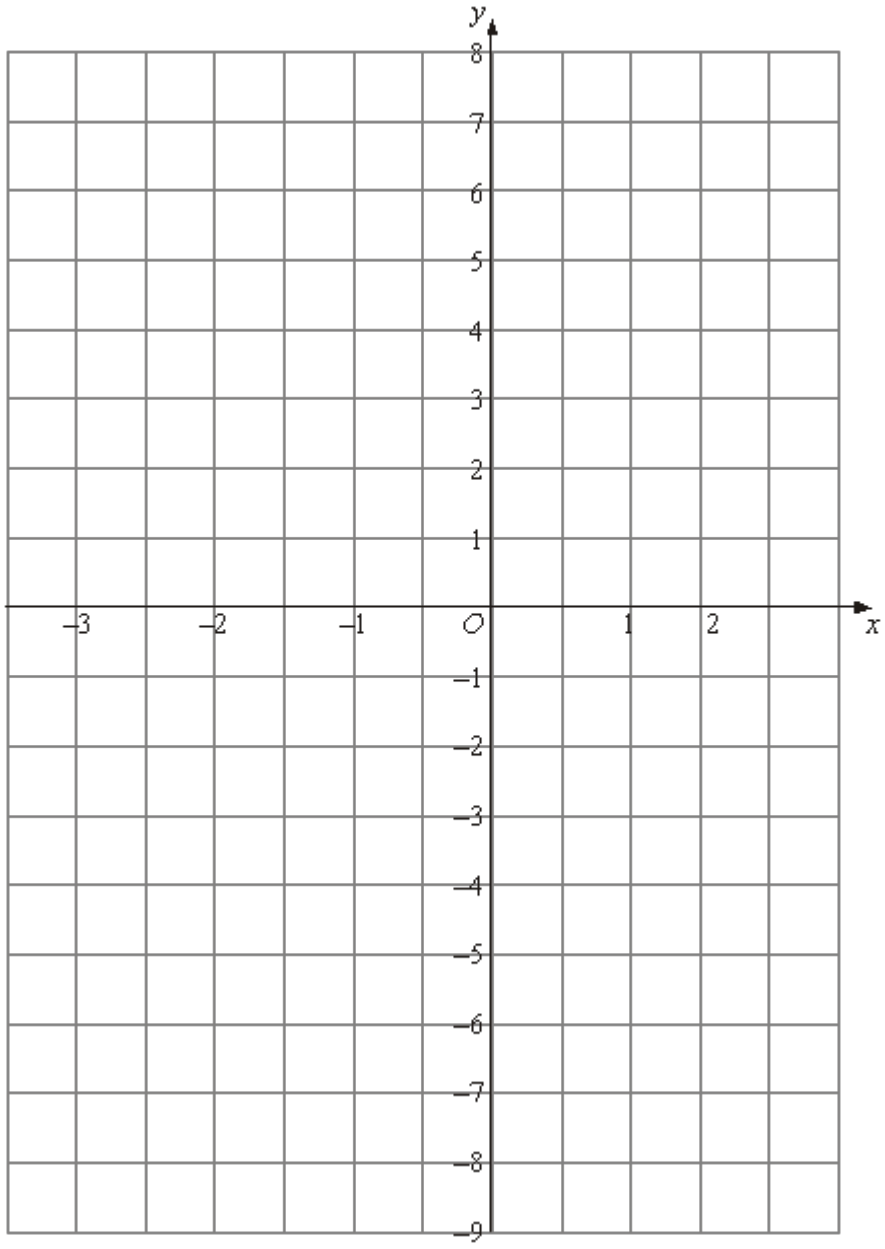
(Total 3 marks)

Q11. (a) Complete the table of values for $y = 3x + 1$

x	–3	–2	–1	0	1	2
y	–8		–2			

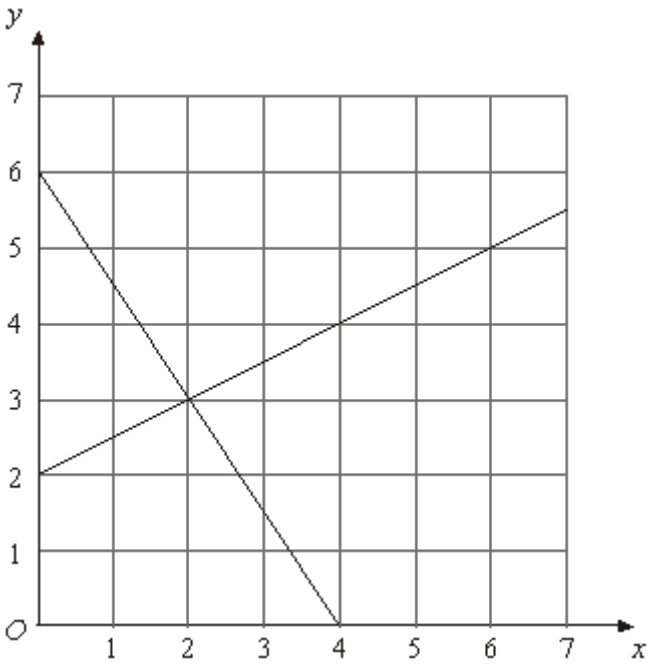
(2)

(b) On the grid, draw the graph of $y = 3x + 1$



(2)
(Total 4 marks)

Q12.



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 = ... y = ...

(1)

(b) Find an equation of the straight line which is parallel to the line $y = \frac{1}{2}x + 2$ and passes through the point (0, 4).

.....

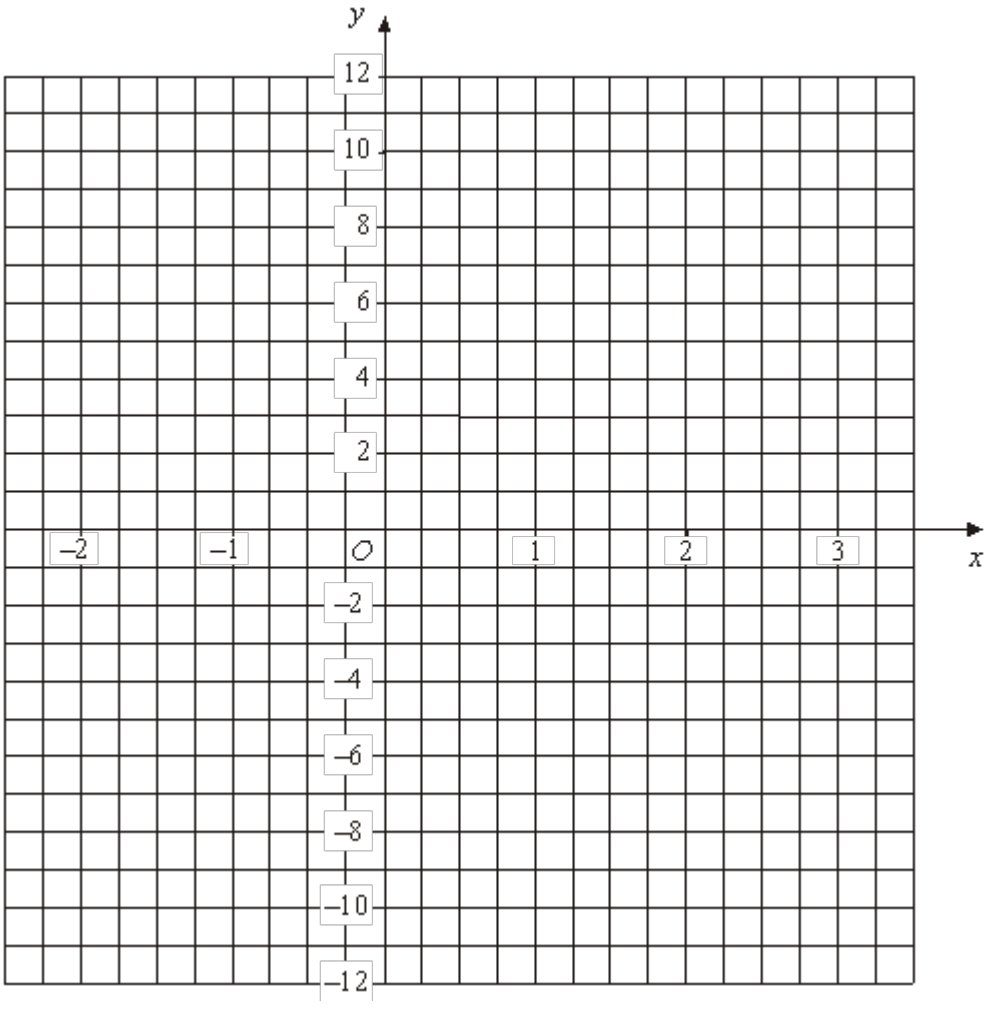
(2)
(Total 3 marks)

Q13. (a) Complete the table of values for $y = 4x - 3$

x	−2	−1	0	1	2	3
y	−11		−3			9

(2)

(b) On the grid, draw the graph of $y = 4x - 3$, for values of x from –2 to 3



(2)

(Total 4 marks)

M1.

	Answer	Mark	Additional Guidance
(a)	–4, (1), 6, 11, (16)	2	**B2** (**B1** for 1 correct entry)
(b)	Straight line	2	**M1** for plotting at least 4 of 'their points' correctly **A1** for correct straight line for $-1 \leq x \leq 3$ S.C. **B1** for line of gradient 5 or y-intercept 1 on y axis if M0 above
			Total for Question: 4 marks

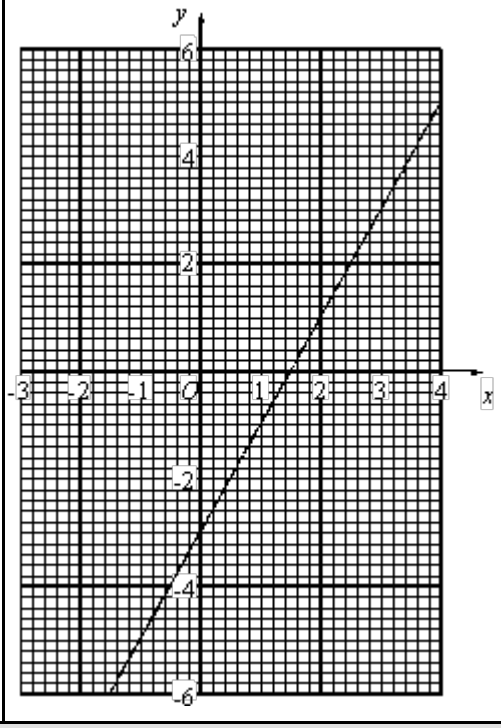
M2.

Working	Answer	Mark	Additional Guidance
(0, 6), (1, 5), (2, 4), (3, 3), (4, 2), (5, 1), (6, 0)	Line	3	**M1** for plotting at least two correct points (may be implied by correct answer) **A1** for line drawn through at least two points **A1** for a line from (6, 0) to (0, 6) (**B2** for plotting three correct points / **B1** for plotting two correct points) SC **B1** for line through (0, 6) or for gradient of –1
			Total for Question: 3 marks

M3.

	Answer	Mark	Additional Guidance
(a)	6, 4, 3, 1	2	**B2** for correct values in table (**B1** for any 2 correct)
(b)	graph	2	**B2** for correct line (**B1** for all "points" plotted correctly) or gradient –1 or y intercept at 6
			Total for Question: 4 marks

M4.

	Working							Answer	Mark	Additional Guidance
(a)	x	–2	–1	0	1	2	3	Table	2	**B2** for 2 correct entries
	y	–7	**–5**	–3	–1	**1**	3			(**B1** for 1 correct entry)
(b)								Graph	2	**B2** for straight line from (–2, –7) to (3, 3) (**B1** for 5 of their points correctly plotted **or** single straight line passing through (0, –3) from x = –2 to +3 **or** for a straight line with gradient 2 from x = –2 to +3 **or** correct straight line that passes through 3 correct points)
										Total for Question: 4 marks

M5.

Working						Answer	Mark	Additional Guidance
x	–1	0	1	2	3	Straight line	3	**M2** for two correct points plotted or a correct straight line which does not cover the range $x = -1$ to $x = 3$ (**M1** for one point correctly plotted or calculated or a straight line through one correct point) **A1** for correct line between –1 and 3 **OR** **M1** for line with correct gradient **M1** for line with correct y intercept **A1** for correct line between –1 and 3
y	–5	–2	1	4	7			
								Total for Question: 3 marks

M6.

	Answer	Mark	Additional Guidance
(a)	–2, (1), 4, 7, 10, (13)	2	**B2** for 4 values correct (B1 for 2 or 3 values correct)
(b)	Single line from (–2, –2) to (3, 13)	2	**M1** for plotting at least 5 of their points correctly **OR** single straight line with positive gradient passing thro' (0,4) from $x = -2$ to $x = 3$ **OR** single straight line of gradient 3 from $x = -2$ to $x = 3$ **OR** correct straight line that passes through 3 correct points A1 cao for correct straight line from at least

			(–2,–2) to (3,13)
			Total for Question: 4 marks

M7.

	Working	Answer	Mark	Additional Guidance
(a)		$y = 5x + c$	1	**B1** for $y = 5x + c$ oe $c \neq 6$
(b)	gradient = $-\frac{1}{m} = -\frac{1}{5}$ $y = -\frac{1}{5} + c$ $x = –2, y = 5$ $5 = \frac{2}{5} + c$ $c = 5 - \frac{2}{5} = 4\frac{3}{5}$ $y = -\frac{1}{5}x + 4\frac{3}{5}$	$y = -\frac{1}{5}x + 4\frac{3}{5}$	3	**M1** recognition that gradient = $-\frac{1}{m} = -\frac{1}{5}$ oe **M1** substitution of $x = –2$, $y = 5$ in $y = mx + c$ where $m = -\frac{1}{5}, \frac{1}{5}$ or –5 **A1** $y = -\frac{1}{5}x + 4\frac{3}{5}$ oe
				Total for Question: 4 marks

M8.

Working	Answer	Mark	Additional Guidance

						Line	3	**(Table of values)** **M1** for at least 2 correct attempts to find points by substituting values of x. **M1** ft for plotting at least 2 of their points (any points plotted from their table must be correct) **A1** for correct line between –3 and 1 **(No table of values)** **M2** for at least 2 correct points (and no incorrect points) plotted OR line segment of $2x + 3$ drawn (ignore any additional incorrect segments) (**M1** for at least 3 correct points with no more than 2 incorrect points) **A1** for correct line between –3 and 1 **(Use of $y = mx + c$)** **M2** for at least 2 correct points (and no incorrect points) plotted OR line segment of $2x + 3$ drawn (ignore any additional incorrect segments) (**M1** for line drawn with gradient of 2 OR line drawn with a y intercept of 3 and a positive gradient) **A1** for correct line between –3 and 1
x	–3	–2	–1	0	1			
y	–3	–1	1	3	5			
								Total for Question: 3 marks

M9.

Working	Answer	Mark	Additional Guidance
Table of values x = – 1 0 1 2 3 y = – 4 1 6 11 16 **OR** Using $y = mx + c$,	Single line from (–1, – 4) to (3, 16)	3	**B3** for a correct single line from (–1, – 4) to (3, 16) B2 for at least 3 correct points plotted and joined with line segments **OR** 3 correct points plotted two of which must be the extremes with no joining **OR** a single line of gradient 5 passing through (0, 1) B1 for 2 correctly plotted points **OR** a single lie of gradient 5 OR a single line passing through

gradient = 5, *y*- intercept = 1			(0, 1)
			Total for Question: 3 marks

M10.

Answer	Mark	Additional Guidance
Region indicated	3	**M1** Both $x = 2$ drawn from at least (2, 1) to (2, 4) and $y = 1$ drawn from at least (2, 1) to (5, 1) **M1** for $x + y = 6$ drawn from at least (2, 4) to (5, 1) **A1** Correct region indicated by shading or clearly labelled. Boundaries of the region may be solid or dashed.
		Total for Question: 3 marks

M11.

	Working	Answer	Mark	Additional Guidance
(a)		(–8), –5, (–2), 1, 4, 7	2	**B2** for all 4 values (**B1** for any 2 correct)
(b)	Points + line	Correct line	2	**B2** cao for correct line between $x = –3$ and $x = 2$ (**B1** ft for plotting 4 points correctly or for a line with gradient 3 or for a line passing through (0,1))
				Total for Question: 4 marks

M12.

	Answer	Mark	Additional Guidance
(a)	$x = 2, y = 3$	1	**B1** cao
(b)	$y = \frac{1}{2}x + 4$	2	**M1** for $y = mx + 4$ or $y = \frac{1}{2}x + c$, $c \neq 2$, or $\frac{1}{2}x + 4$ **A1** for $y = \frac{1}{2}x + 4$ oe
			Total for Question: 3 marks

M13.

	Working							Answer	Mark	Additional Guidance
(a)	x	–2	–1	0	1	2	3	Table	2	**B2** all 3 correct
	y	–11	–7	–3	1	**5**	9			(**B1** for 1 or 2 correct)
(b)								Graph	2	**B2** for correct line between $x = –2$ and $x = 3$ (**B1**ft for plotting 5 of their points correctly or for a straight line with gradient 4 or for a straight line passing through (0, –3))

E1. Questions of this type are almost always set on this paper. However whilst many candidates were able to calculate the positive values of x in the table of values then could not then substitute $x = -1$ into $y = 5x + 1$ correctly. 31% of candidates scored all 4 marks whilst a further 9% scored 3 marks. 2 marks were awarded in 19% of cases and a further 14% of candidates were able to score 1 mark. Other typical errors were to plot the points correctly and then not draw in the straight line and some candidates got the table of values incorrect but were able to score the marks for a correct straight line.

E2. A well understood question with almost all candidates obtaining full marks. Those that did not score maximum marks usually gained 2 marks for plotting the points and not drawing the line.

E3. A well understood question with almost all candidates gaining at least 2 marks. Full marks were gained by about half of all candidates with about a quarter of candidates gaining 3 marks, usually for not joining their points with a straight line.

E4. This question was very well understood with 80% of candidates scoring all four marks. A further 9% scored 3 marks for either drawing a graph from their table of values or for plotting at least 5 of their points correctly. There were still far too many candidates just plotting the points and not drawing in the straight line. Only 4% of candidates scored 1 mark or less.

E5. Foundation

The most successful attempts at drawing the line on the grid were from those candidates who drew up a table of values first. Only 15% % of candidates gained full marks for this question. Some candidates failed to join their points with a straight line and others did not extend their line to cover the full range of values. A further 15% of candidates scored 1 or 2 marks for calculating or plotting 1 or 2 correct points. There was little evidence of candidates entered for this tier using the gradient-intercept method for drawing the line. A disappointingly large number of candidates plotted the points (3, –2) and (–1, 3) then joined them, showing little understanding of this topic.

Higher

Many candidates (57%) found this question straightforward and scored all 3 marks. However, there was a significant minority of pupils who plotted the points (3, –2) and (–1, 3) sometimes joining them. It is disappointing to report that such responses were seen from candidates entered for the Higher Tier. Some candidates attempted to use the gradient-intercept method to draw the line but only scored 1 mark because they did not relate the gradient to the different scales used on the x- and y-axes.

##

This traditional question was surprisingly not well answered. It was uncommon to find a completely correct table of values. There were many errors in plotting points, and too many who presented a set of points through which a line was not drawn. This was a question in which candidates should have scored highly, but failed to do so.

##

In part (a) half the candidates could provide an equation of a straight line parallel to the given line with some enjoying providing unusual, but correct answers such as $y = 5x +$ 123456789 The most common incorrect responses were simply to swap the 5 and 6 over, doubling and writing $y = 10x + 12$, omitting $y =$ or writing $y = –5x + 6$ In part (b) there were hardly any fully correct answers (< 4%). Many had no idea what to do, with 86% not scoring at all. Around 9% scored 1 mark for a

correct gradient seen. However many wrote $–1/(5x)$ rather than $(–1/5)\,x$. Substitution of x

= –2 and y = 5 into any equation was seldom seen. A significant number of candidates did not attempt this question at all whilst others attempted to draw a sketch and got no further.

##

Foundation

There were many candidates who failed to attempt this question, and few gained full marks. The most successful attempts were from those who drew a table of values. Some drew a line which sometimes went through (0,3), but rarely had the correct gradient.

Higher

Many candidates were not sure how to approach this question. Perhaps many were used to more guidance in class (e.g. draw up a table of values). Where students provided a table of values, most showed they understood the equation and completed the table well. However some candidates failed to deal with the substitution of the negative values of x into the equation as demonstrated by the calculations around the question. Many took values outside the given range of x = –3 to x = 1. This was not necessary and created some difficulties with the larger negative numbers. It was good to see that over 44% of the candidates provided the correct straight line for values of x between –3 and 1. However, a few candidates plotted the correct points and then failed to join them up. There were some candidates who used the m and c values to draw the graph without plotting any individual points but many of these confused the gradient and intercept values and drew the graph of $y = 3x + 2$ rather than the required
$y = 2x + 3$. Candidates appeared well equipped and the majority of lines were ruled rather than hand drawn.

E10. Many candidates knew that they had to draw lines but were unable to interpret the inequality signs as meaning just 1 line, so rectangles as the required region were common. There was some confusion between the line x = 2 and the line y = 2, but sadly the line $x + y = 6$ was often drawn as the two lines x = 6 and y = 6. Candidates who drew the correct lines often had no difficulty in identifying the correct region.

E11. Although a lot of fully correct tables were seen in part (a) there were many that contained errors. Candidates found calculating with negative numbers a problem and the y-value for $x = -2$ was frequently incorrect. Some candidates failed to work out any correct values and a commonly seen set of y-values was –8, –4, –2, 0, 2, 4. Many candidates who managed to calculate the entries in the table then either failed to plot the points or plotted the points but did not join them up. Some candidates were able to gain 1 mark in (b) by plotting their incorrect values from the table in (a).

E12. Part (a) was answered correctly by almost 60% of the candidates.

Many candidates attempted to solve the simultaneous equations using an algebraic method instead of using the graphs. Most of these attempts were unsuccessful. Part (b) was answered correctly by less than half of the candidates. Many who did not give a fully correct equation were awarded one mark for an equation with either a correct gradient or a correct intercept.

E13. This question was answered well with the majority of candidates completing the table accurately and drawing the correct straight line.

In part (a) the most common error was an incorrect y-value for $x = -1$.

Candidates with an error in the table frequently went on to draw the correct line but unfortunately did not return to (a) to correct the table. A significant number of candidates found it difficult to plot negative coordinates, often plotting negative values of y as positive values. A few plotted the points correctly but failed to join them up.