MATHSDIY

SOLUTIONS

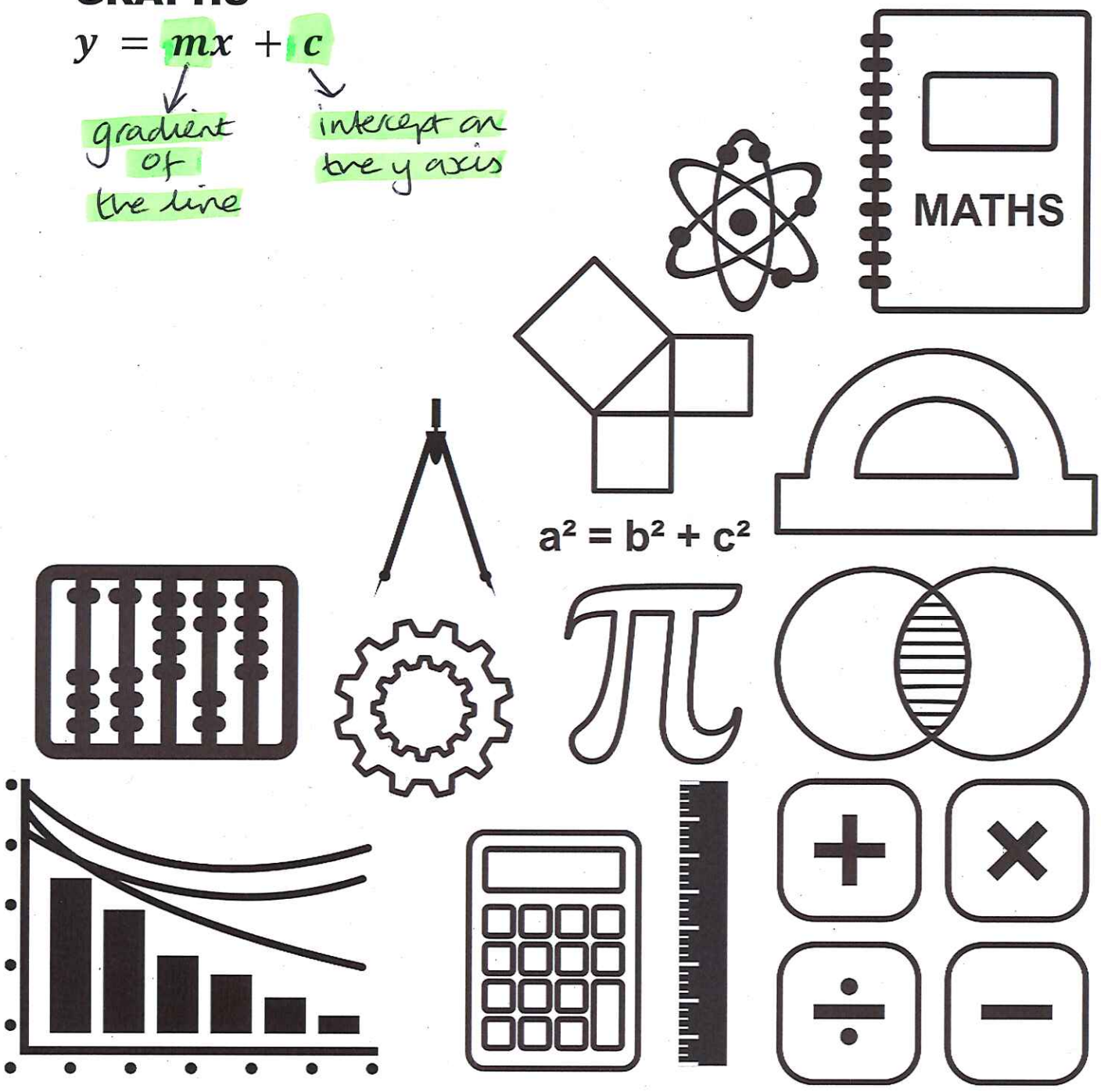
GCSE TOPIC BOOKLET

GRAPHS

$y = mx + c$

m: gradient of the line

c: intercept on the y axis



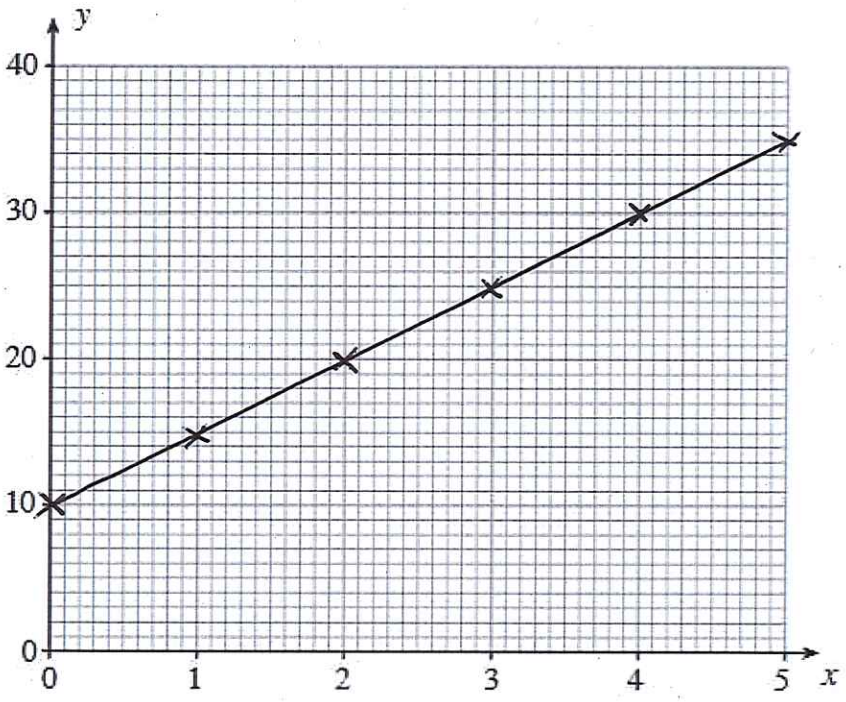
1. On the graph paper below, draw the graph of the straight line $y = 5x + 10$.

intercept on y axis = 10

gradient = 5

every time you go across 1, you go up 5

[3]



2.

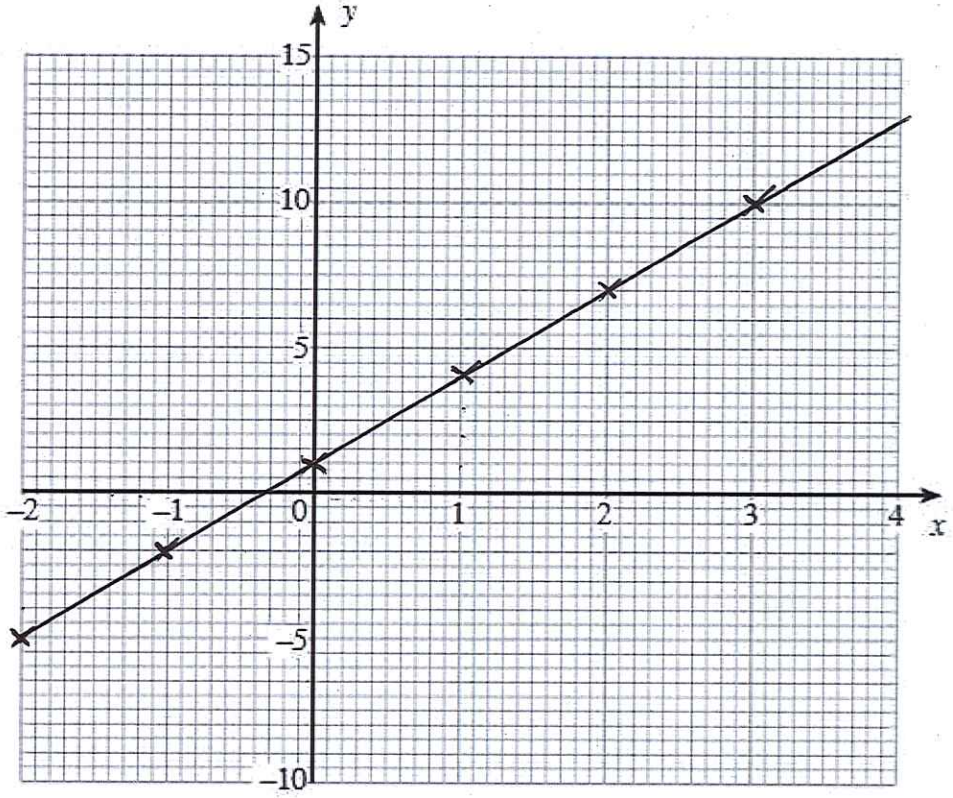
(a) Draw the graph of $y = 3x + 1$ on the graph paper below.

intercept on y axis = 1

gradient = 3

every time you go across 1, you go up 3

[3]

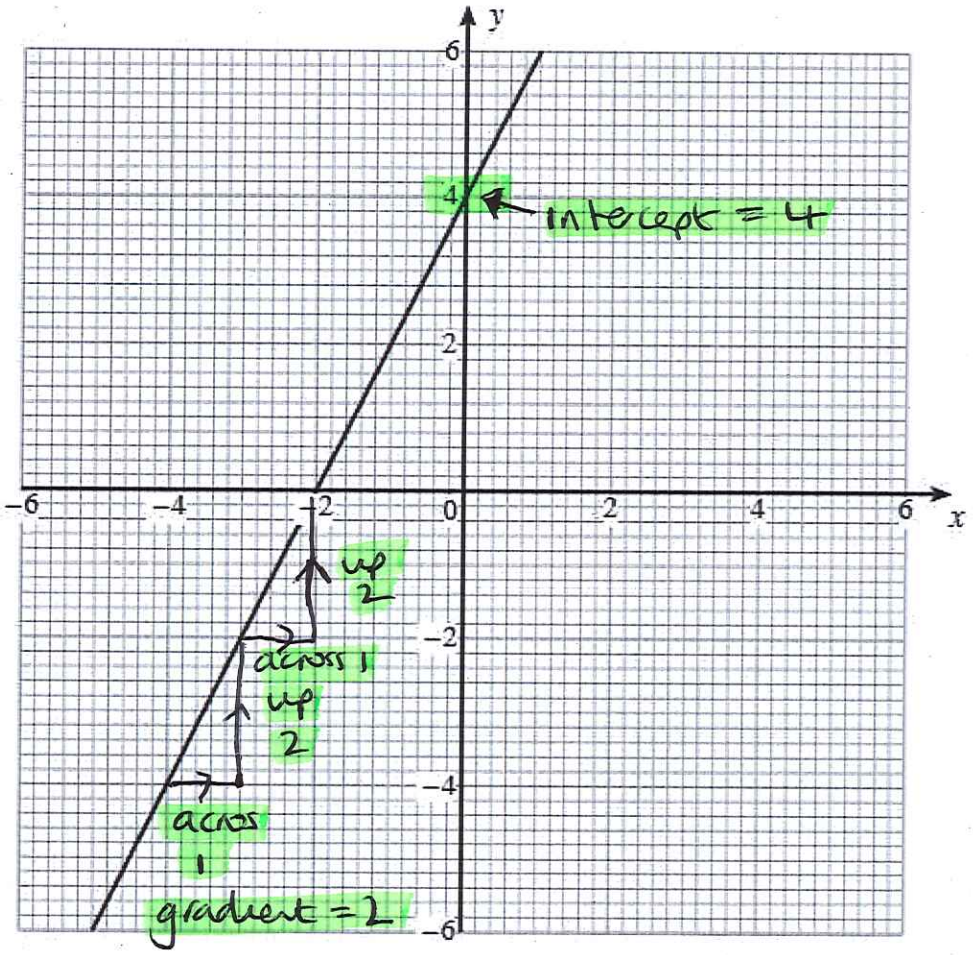


(b) State the coordinates of the point where the graph of $y = 3x + 1$ intersects the y-axis.

(0 , 1)

[1]

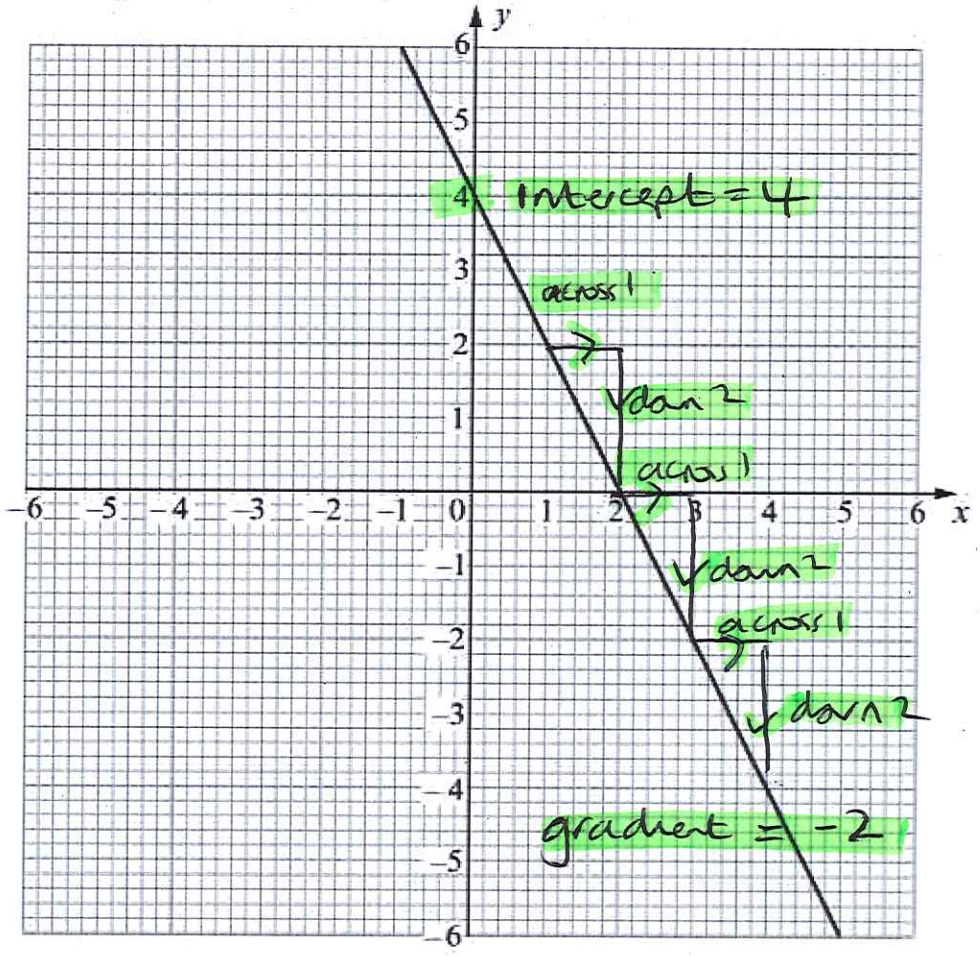
3. Write down the equation of the straight line shown in the following diagram in the form $y = mx + c$.



Equation of the straight line is $y =$ 2 $x +$ 4

[3]

4. *(a)* Find the equation of the straight line shown in the following diagram.
Write your answer in the form $y = mx + c$.



Equation of the straight line is $y =$ $-2x + 4$

[3]

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

$y = 5x + 2$

[1]

$y = 5x - 10$

$y = 5x + 8$ etc

any line with the same gradient, so starts '5x' then any intercept

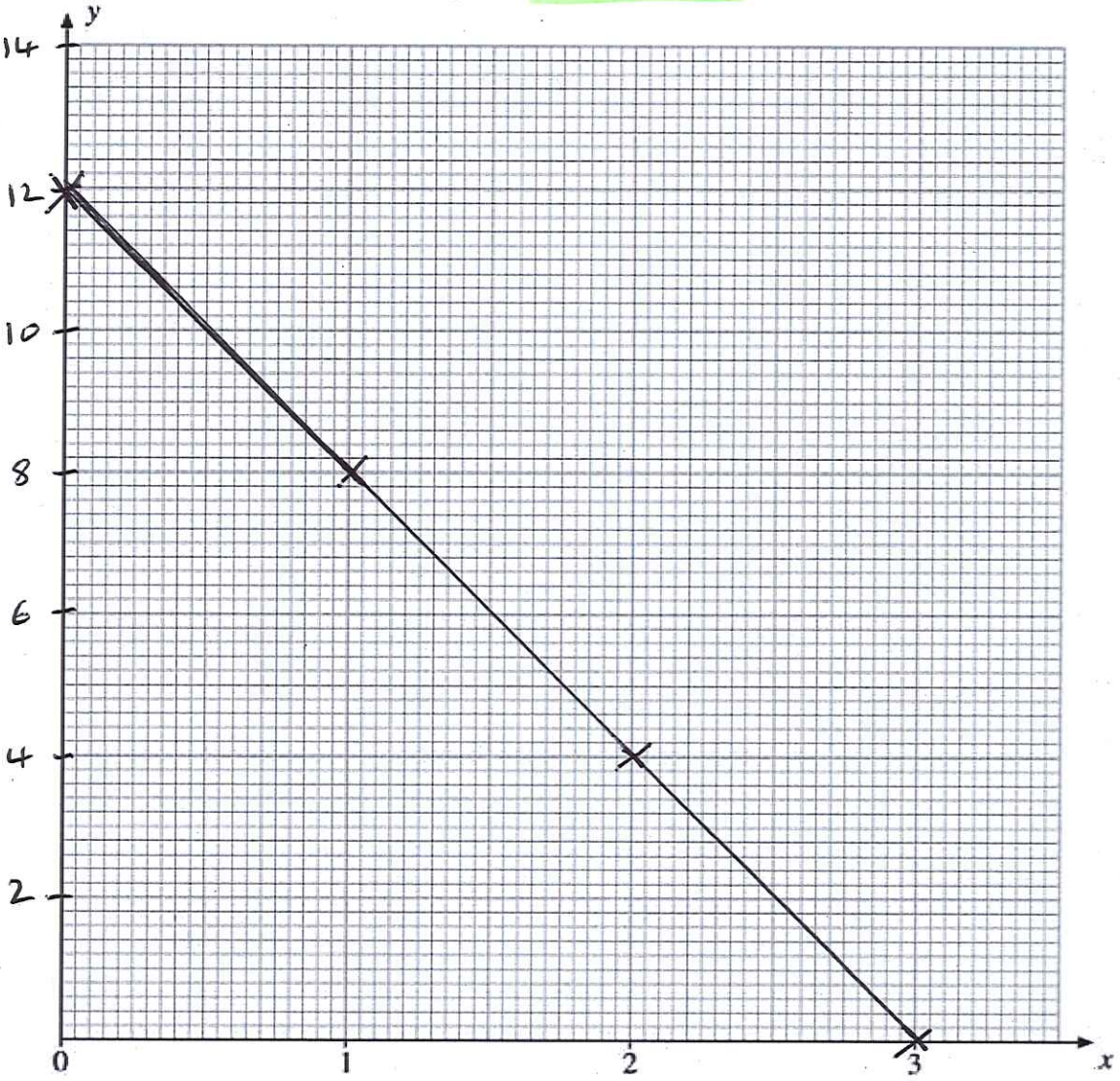
5. Use the graph paper below to draw the graph of the straight line $y = 12 - 4x$.

rearrange it so that it is $y = mx + c$

$y = -4x + 12$

gradient $= -4$ — every time you go across 1, you go down 4

intercept $= 12$



[4]

6. Use the graph paper below to draw the graph of the straight line $y = 10 - 3x$.

Rearrange it so that it is $y = mx + c$

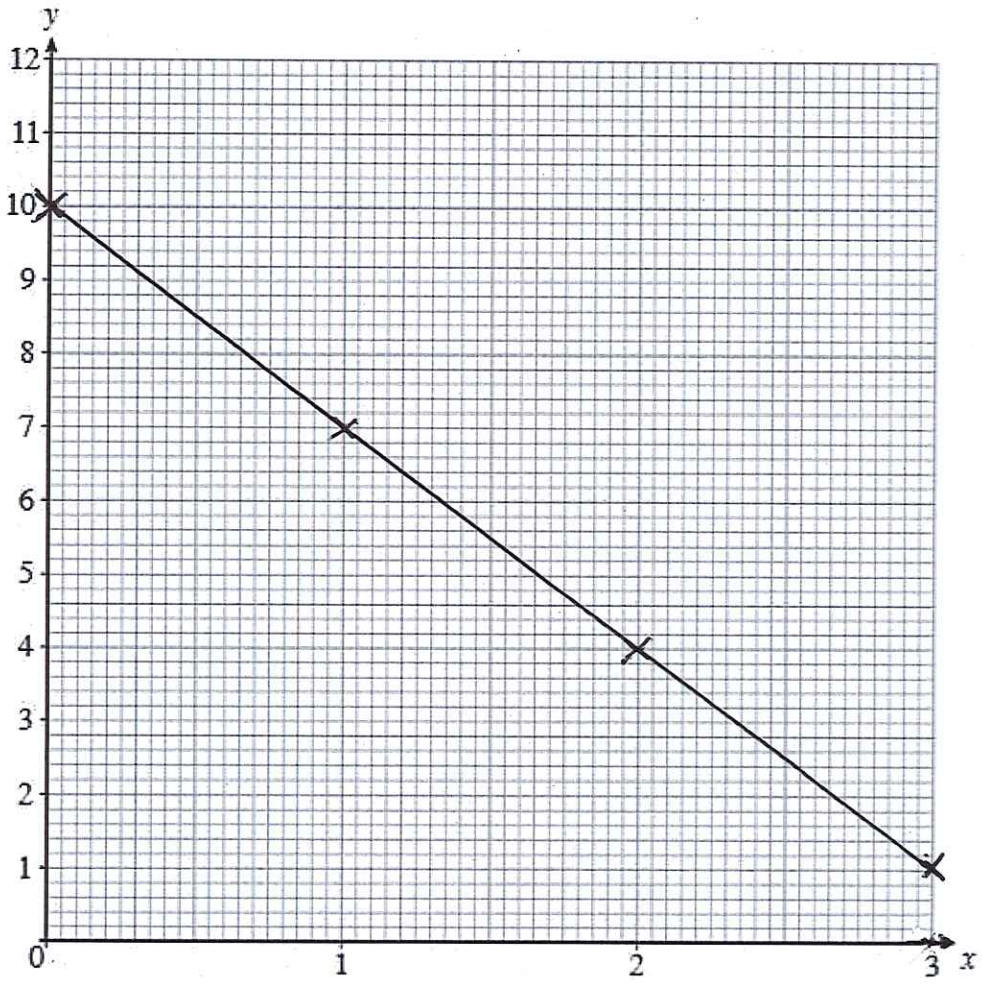
$y = -3x + 10$

gradient $= -3$ intercept $= 10$

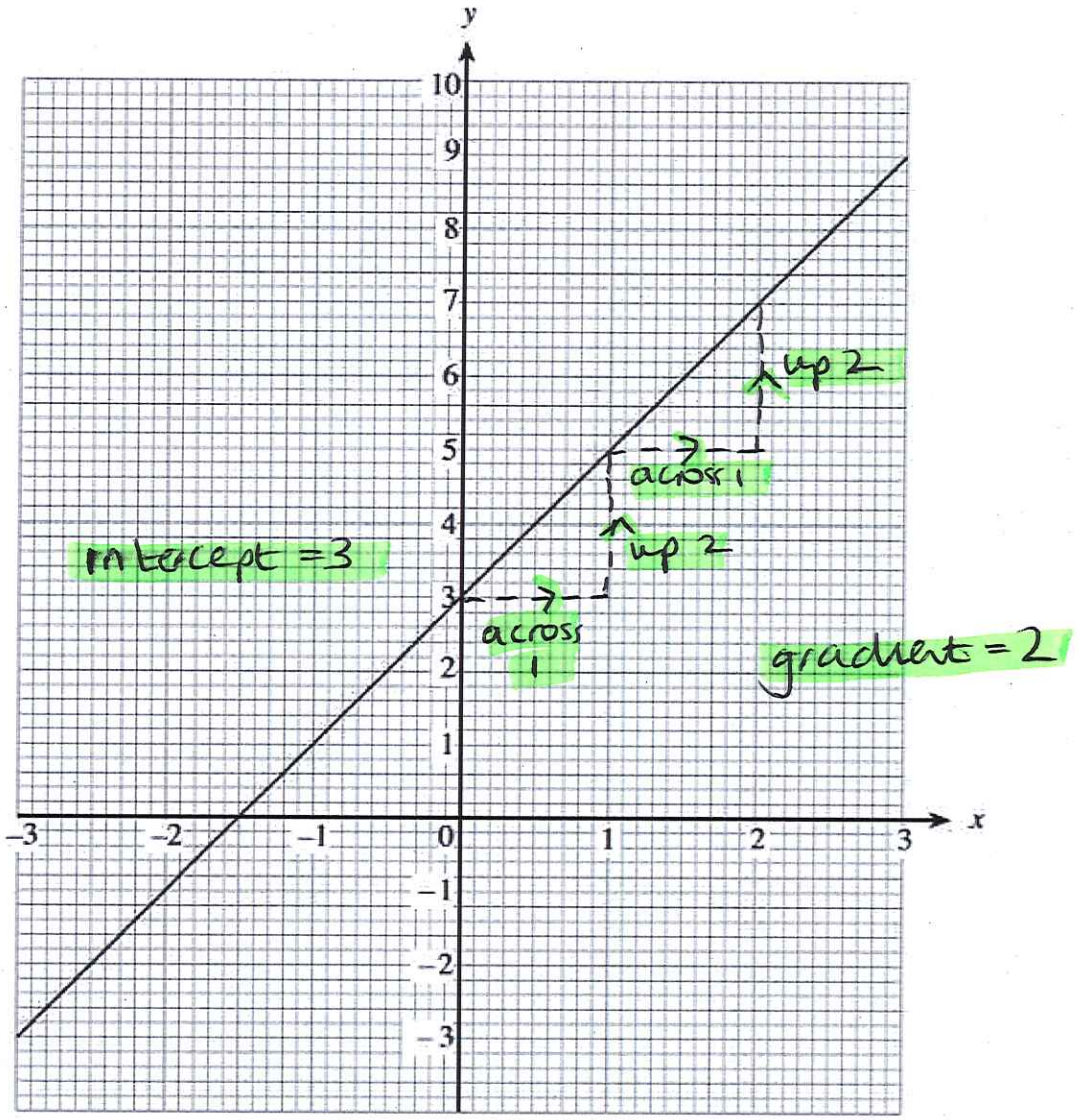
every time you go across 1,

you go down 3

[3]



7. The diagram shows a straight line graph.



(a) Find the gradient of the straight line.

gradient = 2

[2]

(b) Write down the equation of the straight line in the form $y = mx + c$.

$y = 2x + 3$

[1]

8. The equation of a straight line is given by the equation $y = mx + c$, where m and c are constants.

(a) Write down the equation of a straight line that passes through the point (0, 0).

intercept = 0

$y = 3x$, $y = 5x$, $y = 8x$

$y = -2x$, $y = -9x$ etc

any line of this format

[1]

(b) Find the equation of a straight line passing through the points (0, 4) and (2, 8).

$\text{gradient} = \frac{\text{change in } y}{\text{change in } x} = \frac{8-4}{2-0} = \frac{4}{2} = 2$

given, crosses y axis at 4 (0, 4)

so, intercept = 4

$y = 2x + 4$

[4]