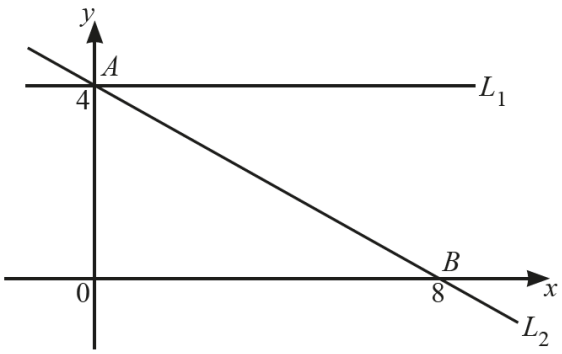
Coordinate geometry – 2023 IGCSE 0580

1. March/2023/Paper_0580/42/No.6



NOT TO SCALE

A is the point (0, 4) and B is the point (8, 0).
The line L_1 is parallel to the x-axis.
The line L_2 passes through A and B.

(a) Write down the equation of L_1.

..... [1]

(b) Find the equation of L_2.
Give your answer in the form $y = mx + c$.

$y =$ ..... [2]

(c) C is the point (2, 3).
The line L_3 passes through C and is perpendicular to L_2.

(i) Show that the equation of L_3 is $y = 2x - 1$.

[3]

(ii) L_3 crosses the x-axis at D.

Find the length of CD.

..... [5]

2. June/2023/Paper_0580/22/No.15

C is the point $(5, -1)$ and D is the point $(13, 15)$.

(a) Find the midpoint of CD.

(..... , ...) [2]

(b) Find the gradient of CD.

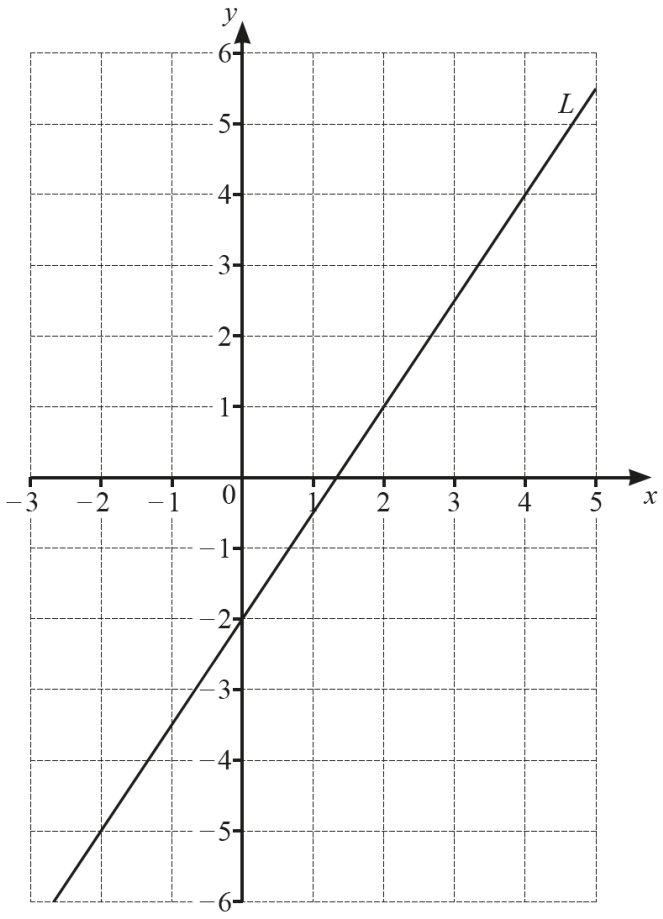
..... [2]

(c) Find the equation of the perpendicular bisector of CD.
Give your answer in the form $y = mx + c$.

$y =$ ..... [3]

3. June/2023/Paper_0580/32/No.7

(a)



(i) Find the equation of line L.
Give your answer in the form $y = mx + c$.

$y =$ ..... [2]

(ii) On the grid, draw the line $y = 1$. [1]

(iii) Write down the coordinates of the point where the two lines intersect.

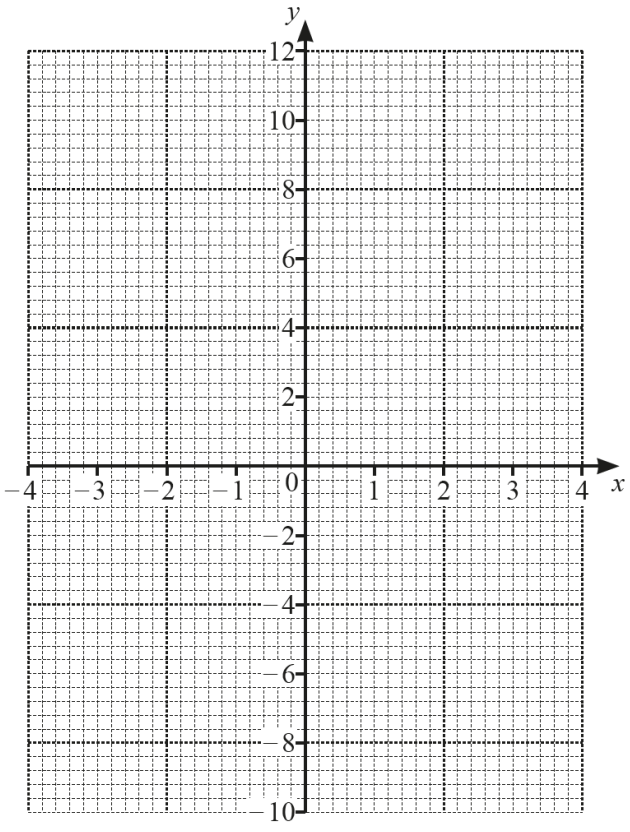
(..... , ...) [1]

(b) (i) Complete the table of values for $y = x^2 + x - 8$.

x	-4	-3	-2	-1	0	1	2	3	4
y	4	-2		-8	-8		-2	4	

[2]

(ii) On the grid, draw the graph of $y = x^2 + x - 8$ for $-4 \leqslant x \leqslant 4$.



[4]

(iii) Write down the equation of the line of symmetry of the graph.

..... [1]

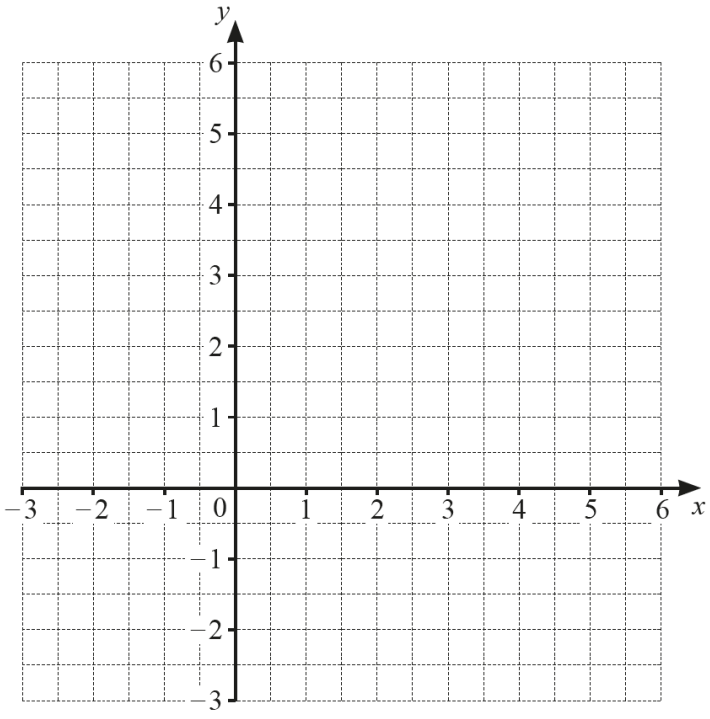
(iv) Use your graph to solve the equation $x^2 + x - 8 = 0$.

$x =$ ..... or $x =$ ..... [2]

4. June/2023/Paper_0580/41/No.6

(a) In the square $ABCD$, A has coordinates $(-2, 1)$ and B has coordinates $(1, 5)$.
C has coordinates (a, b), where a and b are both positive integers.

Find the coordinates of C and the coordinates of D.
You may use the grid to help you.



C (..... , ...)

D (..... , ...) [4]

(b) P has coordinates $(-1, 3)$ and Q has coordinates $(6, 4)$.

(i) Find the coordinates of the midpoint of PQ.

(..... , ...) [2]

(ii) Find the length PQ.

..... [3]

(iii) Find the gradient of PQ.

..... [2]

(iv) Find the equation of the line parallel to PQ that crosses the x-axis at $x = 2$.

..... [3]

5. June/2023/Paper_0580/43/No.11

M has coordinates (4, 1) and N has coordinates (−2, −7).

(a) Find the length of MN.

..... [3]

(b) Find the gradient of MN.

..... [2]

(c) Find the equation of the perpendicular bisector of MN.

..... [4]