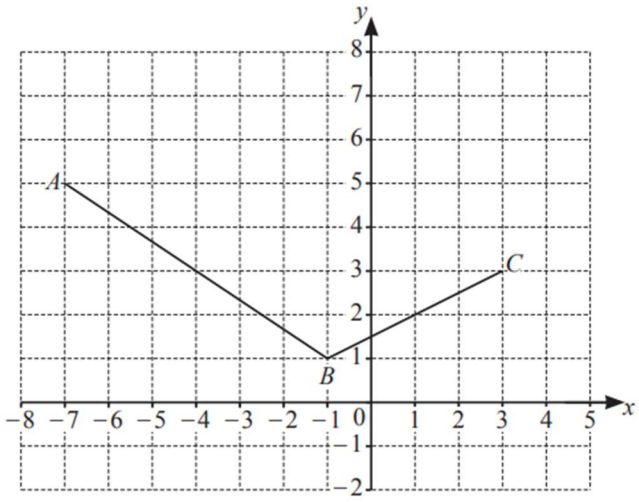
1

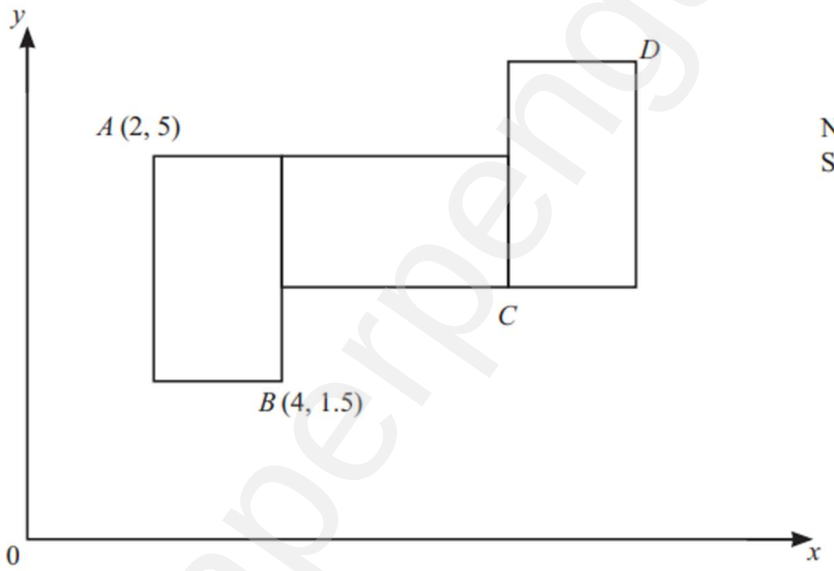


The diagram shows two sides of a parallelogram $ABCD$.

Find the coordinates of point D.

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

5



NOT TO SCALE

A pattern is formed by 3 congruent rectangles.
Each rectangle is a rotation of 90° around one vertex of the rectangle next to it.
The point A has coordinates $(2, 5)$.
The point B has coordinates $(4, 1.5)$.

Work out the coordinates of point C and point D.

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

D (..... , ...)

[3]

9 The line $y = 2x - 5$ intersects the line $y = 3$ at the point P.

Find the coordinates of the point P.

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

5 **(a)** Write down the gradient of the line $y = 5x + 7$.

..... [1]

(b) Find the coordinates of the point where the line $y = 5x + 7$ crosses the y-axis.

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

10 A is the point $(-1, 13)$ and B is the point $(3, 1)$.

Find the equation of the line AB, giving your answer in the form $y = mx + c$.

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

16 A is the point $(5, 7)$ and B is the point $(9, -1)$.

(b) Find the equation of the line AB.

..... [3]

9 **(a)** The equation of line L is $3x-8y+20=0$.

(i) Find the gradient of line L.

..... [2]

(ii) Find the coordinates of the point where line L cuts the y-axis.

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

18 Find the equation of the straight line that passes through the points (2, −2) and (3, 10).

Give your answer in the form $y=mx+c$.

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

24 **(a)** A is the point $(a, 12)$ and B is the point $(b, 27)$.

(i) Find the y-coordinate of the midpoint of AB.

..... [1]

(ii) The line AB has gradient 3.

Find an expression for a in terms of b.

$a =$ ..... [3]

14 Find the gradient of a line that is perpendicular to $8y+4x=5$.

..... [2]

15 **(a)** A is the point (3, 16) and B is the point (8, 31).

Find the equation of the line that passes through A and B.
Give your answer in the form $y=mx+c$.

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

(b) The line CD has equation $y=0.5x-11$.

Find the gradient of a line that is perpendicular to the line CD.

..... [1]

17 Find the gradient of the line that is perpendicular to the line $3y=4x-5$.

..... [2]

12 A straight line, l, has equation $y = 5x + 12$.

(a) Write down the gradient of line l.

..... [1]

(b) Find the coordinates of the point where line l crosses the x-axis.

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

(c) A line perpendicular to line l has gradient k.

Find the value of k.

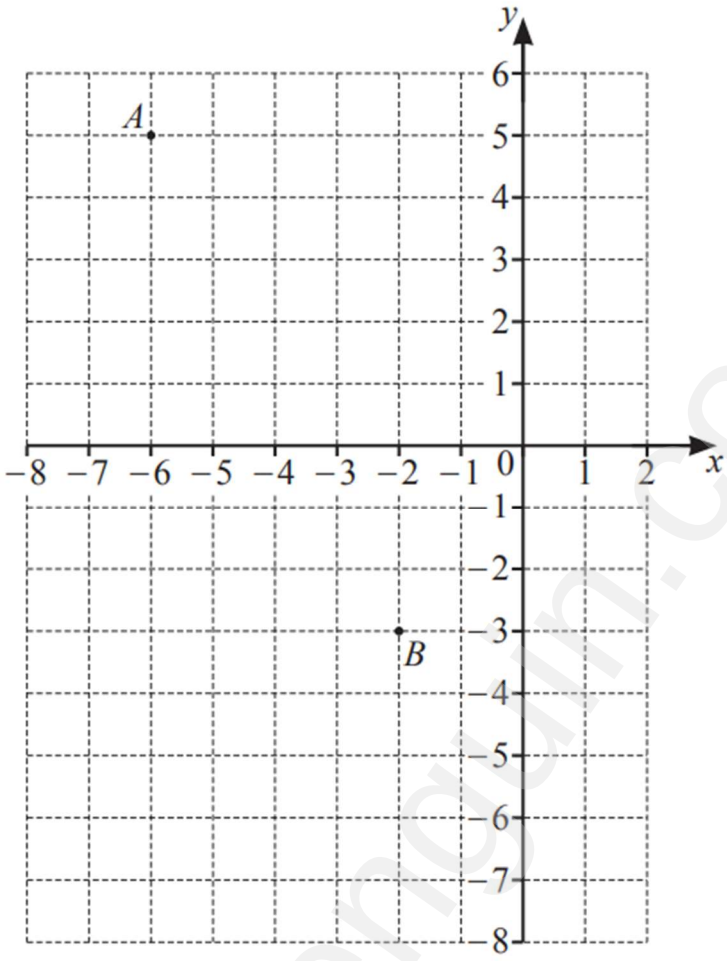
$k =$ ..... [1]

11 Line L has equation $y = 4 - 5x$.

Find the equation of a line that is perpendicular to line L and passes through the point (0, 6).

..... [3]

16



A is the point $(-6, 5)$ and B is the point $(-2, -3)$.

(a) Find the equation of the straight line, l, that passes through point A and point B.
Give your answer in the form $y = mx + c$.

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

(b) Find the equation of the line that is perpendicular to l and passes through the origin.

..... [2]

16 A is the point $(7, 2)$ and B is the point $(-5, 8)$.

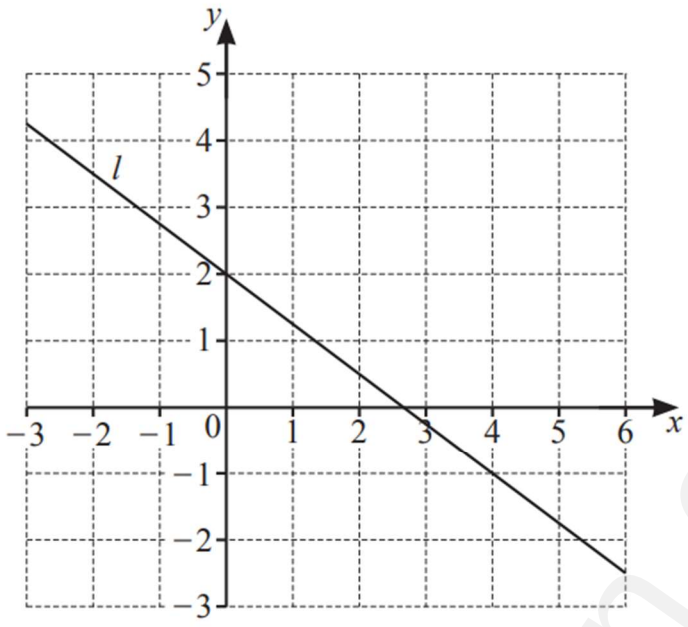
(a) Calculate the length of AB.

..... [3]

(b) Find the equation of the line that is perpendicular to AB and that passes through the point $(-1, 3)$. Give your answer in the form $y = mx + c$.

$y =$ ..... [4]

16



(a) Find the gradient of line l.

..... [2]

(b) Find the equation of line l in the form $y = mx + c$.

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

(c) Find the equation of the line that is perpendicular to line l and passes through the point $(12, -7)$. Give your answer in the form $y = mx + c$.

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

9 A is the point (1, 3) and B is the point (3, −7).
The line l passes through A and is perpendicular to AB.

Find the equation of line l.
Give your answer in the form $py + qx = r$ where p, q and r are integers.

..... [4]

26 A is the point (6, 1) and B is the point (2, 7).

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

$y =$ ..... [5]

13 A is the point (1, 7) and B is the point (4, 1).

Find the equation of the perpendicular bisector of AB in the form $y = mx + c$.

$y =$ ..... [5]

(b) The coordinates of P are $(-3, 8)$ and the coordinates of Q are $(9, -2)$.

(ii) Find the equation of the line parallel to PQ that passes through the point $(6, -1)$.

..... [3]

(iii) Find the equation of the perpendicular bisector of PQ.

..... [4]

8 AB is a line with midpoint M.
A is the point (2, 3) and M is the point (12, 7).

(a) Find the coordinates of B.

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

(b) Show that the equation of the perpendicular bisector of AB is $2y+5x=74$.

[4]

10 A is the point $(-5, 7)$ and C is the point $(1, -2)$.

(a) B is the mid-point of AC.

Find the coordinates of B.

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

(b) The line CD is perpendicular to the line AC.

Find the equation of line CD.

..... [4]

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]

14 The line L is perpendicular to the line $2y = 5 - x$ and passes through the point $(2, 3)$.

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

$y =$ ..... [4]

10 **(a)** A rhombus $ABCD$ has a diagonal AC where A is the point $(-3, 10)$ and C is the point $(4, -4)$.

(i) Calculate the length AC.

..... [3]

(ii) Show that the equation of the line AC is $y = -2x + 4$.

[2]

(iii) Find the equation of the line BD.

..... [4]

16 A kite is drawn on a coordinate grid.
The diagonals of the kite intersect at the point $(-2, -5)$.

One diagonal has equation $y = 4x + 3$.

Find the equation of the other diagonal of the kite.
Give your answer in the form $y = mx + c$.

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

24 A line from the point (2, 3) is perpendicular to the line $y = \frac{1}{3}x + 1$.
The two lines meet at the point P.

Find the coordinates of P.

(..... , ...) [5]

16 The point A has coordinates (2, 3) and the point B has coordinates (6, 5).
The point C lies on the line AB.
The point D has coordinates (2, 5.5).
CD is perpendicular to AB.

Find the coordinates of C.

(..... , ...) [5]