IGCSE PAST PAPER 2 (0580) EXTENDED

Co-ordinate Geometry 1

WRITTEN BY RISHI

1 A is the point $(5, -5)$ and B is the point $(9, 3)$.

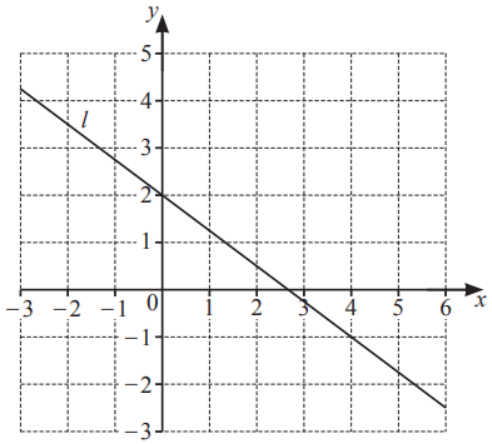
(a) Find the coordinates of the midpoint of AB.

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

(b) Find the length of AB.

..... [3]

2



(a) Find the gradient of line l.

..... [2]

3 A is the point (5, 7) and B is the point (9, −1).

(a) Find the length AB.

..... [3]

(b) Find the equation of the line AB.

..... [3]

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

..... [2]

5 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]

6 **(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]

7 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]

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8 Line L passes through the points (0, −3) and (6, 9).

(a) Find the equation of line L.

..... [3]

(b) Find the equation of the line that is perpendicular to line L and passes through the point (0, 2).

..... [2]

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9 **(a)** Find the co-ordinates of the point where the line $y = 3x - 8$ crosses the y-axis.

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

(b) Write down the gradient of the line $y = 3x - 8$.

..... [1]

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10 A is the point $(7, 12)$ and B is the point $(2, -1)$.

Find the length of AB.

..... [3]

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11 Show that the line $4y = 5x - 10$ is perpendicular to the line $5y + 4x = 35$.

[3]

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12 Find the gradient of the line that is perpendicular to the line $2y = 3 + 5x$.

..... [2]

13 A is the point (2, 1) and B is the point (9, 4).

Find the length of AB.

..... [3]

14 A straight line joins the points $(3k, 6)$ and $(k, -5)$.
The line has a gradient of 2.

Find the value of k.

$k =$ ..... [3]

15 A is the point $(2, 3)$ and B is the point $(7, -5)$.

(a) Find the co-ordinates of the midpoint of AB.

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

(b) Find the equation of the line through A that is perpendicular to AB.
Give your answer in the form $y = mx + c$.

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

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16 Find the mid-point of AB where $A = (w, r)$ and $B = (3w, t)$.
Give your answer in its simplest form in terms of w, r and t.

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

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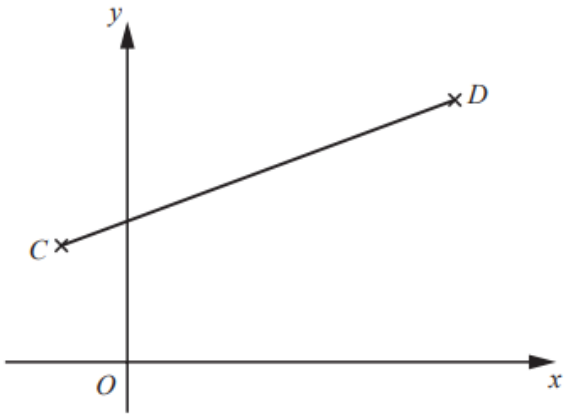
17



NOT TO SCALE

The diagram shows the points $C(-1, 2)$ and $D(9, 7)$.

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

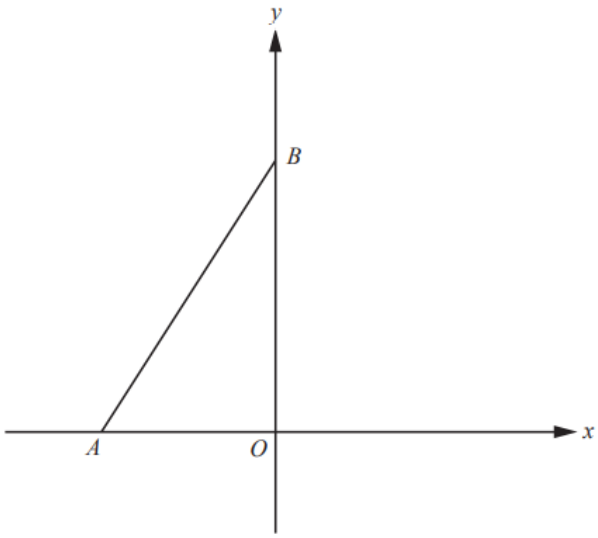
$y =$ ..... [4]

18 A line has gradient 5.
M and N are two points on this line.
M is the point $(x, 8)$ and N is the point $(k, 23)$.

Find an expression for x in terms of k.

$x =$ ..... [3]

19



NOT TO SCALE

A is the point $(-2, 0)$ and B is the point $(0, 4)$.

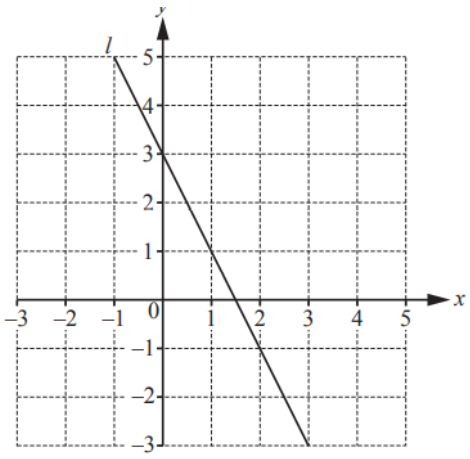
(a) Find the equation of the straight line joining A and B.

..... [3]

(b) Find the equation of the perpendicular bisector of AB.

..... [4]

20



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

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

(b) A line perpendicular to the line l passes through the point $(3, -1)$.

Find the equation of this line.

..... [3]