

Equations of Straight Lines

For AQA Level 2 Certificate in Further Mathematics (8365)

Name _____

Total marks: **32**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You may use a calculator.

- 1** Circle the gradient of the line $5x + 2y = 8$

[1 mark]

$-\frac{5}{2}$

$-\frac{2}{5}$

$\frac{5}{2}$

5

- 2** Work out the gradient of the straight line through the points $(-3, 8)$ and $(5, -4)$

[2 marks]

Answer _____

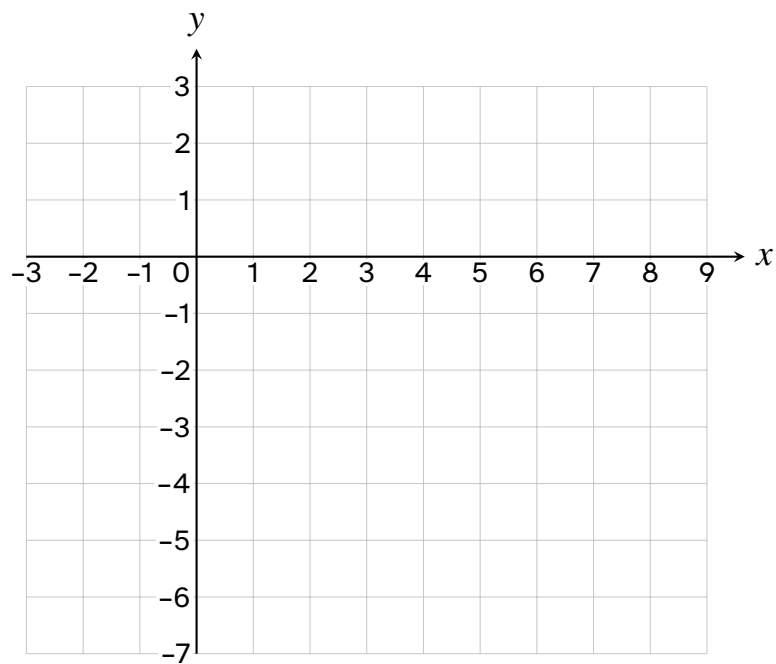
3 Line K has equation $3y = 2x - 12$

- (a) K crosses the y -axis at the point A .
Write down the coordinates of A .

[1 mark]

Answer (_____ , _____)

- (b) On the grid, draw line K for values of x from -3 to 9



[2 marks]

4 The straight line L has equation $2x - 5y = 3$

- (a) Work out the equation of the line that is parallel to L and passes through the point $(10, -1)$
Give your answer in the form $y = mx + c$

[3 marks]

Answer _____

- (b) Work out the equation of the line that is perpendicular to L and passes through the point where L crosses the x -axis.
Give your answer in the form $ax + by = c$ where a , b and c are integers.

[3 marks]

Answer _____

5 Here are the equations of three straight lines.

Line A: $4y = 3x + 5$

Line B: $3x + 4y = 12$

Line C: $8x + 6y = 1$

Two of the lines are perpendicular.

Which two?

You must show your working.

[3 marks]

Answer _____

- 6** Line L passes through the points $(-2, 9)$ and $(4, -3)$
Line M has equation $x - 3y = 6$
Work out the coordinates of the point where L and M intersect.
You must show your working.

[4 marks]

Answer (_____ , _____)

- 7** The lines $3x + 2y = 18$ and $y = mx - 4$ meet at a point on the x -axis.
Show that the two lines are perpendicular.

[4 marks]

8 The straight line L passes through the points $A(\sqrt{2}, 5)$ and $B(3\sqrt{2}, 1)$

(a) Show that the equation of L can be written as $y = 7 - \sqrt{2}x$

[3 marks]

(b) L crosses the x -axis at the point C .

Work out the x -coordinate of C .

Give your answer in the form $\frac{a\sqrt{2}}{b}$ where a and b are integers.

[2 marks]

Answer _____

9 Line P has equation $y = kx - 3$

Line Q has equation $(k + 5)x + 6y = 1$

k is a constant.

Lines P and Q are perpendicular.

Work out the two possible values of k .

You must show your working.

[4 marks]

Answer $k =$ _____ or $k =$ _____