Lesson 3

A-Level Pure Mathematics, Year 1
Additional Mathematics
GCSE
Coordinate Geometry

3.1 Short Questions Homework

Any solution based entirely on graphical or numerical methods is not acceptable

Marks Available : 30

Question 1

Find the length of the line segment between $A(2,\ 9)$ and $B(3,\ 12)$

[2 marks]

Question 2

Determine the gradient of the line through the points $A(4,\ 3)$ and $B(8,\ 11)$

[2 marks]

Question 3

A line has a gradient of $\frac{5}{7}$ and cuts the y-axis at the point $\left(0,\ \frac{9}{7}\right)$

Write the equation of the line in the form $y = mx + c$, where m and c are constants.

[2 marks]

Question 4

A line has equation $3y + 4x + 6 = 0$

Find **(i)** the gradient

and **(ii)** the y-intercept

of the line

[2 marks]

Question 5

Find the equation of the line with gradient $\frac{1}{2}$ which passes through $(3, 2)$

[3 marks]

Question 6

Find the equation of the line that passes through $(2, -1)$ and $(3, 7)$

[3 marks]

Question 7

Find the coordinates of the point where the line $y = -2x - 7$ cuts

(i) the y-axis

[1 mark]

(ii) the x-axis

[1 mark]

Question 8

For each of the following lines, decide if the point $(4, 8)$ is on the line, or not.

(i) $y = 2x$

[1 mark]

(ii) $y = x + 4$

[1 mark]

(iii) $y = 5x - 12$

[1 mark]

(iv) $y = -2x - 8$

[1 mark]

Question 9

Find the equation of the line with gradient 3 that passes through the point $(1, -0.5)$

[3 marks]

Question 10

Find the equation of the straight line through $(-1, 4)$ and $(2, 3)$

[3 marks]

Question 11

The lines with equations $5x + 6y = 45$ and $3y - x - 5 = 0$ meet at the point A.
Find an equation of the line through A whose gradient is 2.

[4 marks]