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 $\dfrac{5}{7}$ and cuts the y-axis at the point $\left(0, \dfrac{9}{7}\right)$

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 $\dfrac{1}{2}$ which passes through $(\,3, 2\,)$

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]