LINE

1 11^{th} Maths - EXERCISE-10.2

1. Passing through the point (– 4, 3) with slope $\frac{1}{2}$

2 SOLUTION

Given points are

$$\mathbf{P} = \begin{pmatrix} -4 \\ 3 \end{pmatrix}, m = \frac{1}{2} \tag{1}$$

The line formula in matrix form

$$\mathbf{m}^{\top}\left(\mathbf{X} - \mathbf{P}\right) = 0 \tag{2}$$

$$\mathbf{m} = \begin{pmatrix} 1 \\ m \end{pmatrix} \tag{3}$$

$$\begin{pmatrix} 1 & 2 \end{pmatrix}\left(\mathbf{X} - \mathbf{P}\right) = 0 \tag{4}$$

$$\begin{pmatrix} 1 & 2 \end{pmatrix}\left(\begin{pmatrix} \mathbf{x} \\ \mathbf{y} \end{pmatrix} - \begin{pmatrix} -4 \\ 3 \end{pmatrix}\right) = 0 \tag{5}$$

$$\begin{pmatrix} 1 & 2 \end{pmatrix}\left(\mathbf{X}\right) = -10 \tag{6}$$

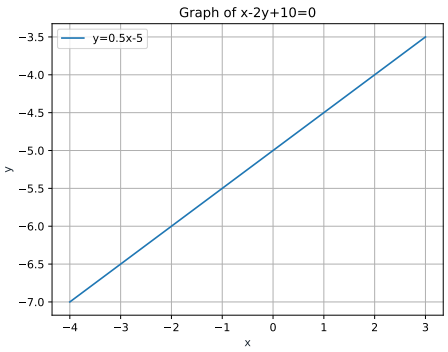

Figure 1: line

3 Figure