1.1.9.5

EE24BTECH11024 - G.Abhimanyu Koushik

Question:

The distance between the points $\begin{pmatrix} 0 \\ 2\sqrt{5} \end{pmatrix}$ and $\begin{pmatrix} -2\sqrt{5} \\ 0 \end{pmatrix}$ is

Solution:

Symbol	Value	Description
A	$\begin{pmatrix} 0 \\ 2\sqrt{5} \end{pmatrix}$	First point
B	$\begin{pmatrix} -2\sqrt{5} \\ 0 \end{pmatrix}$	Second point

TABLE 0: Variables Used

Distance between **A** and **B**, d_1 is

$$(\mathbf{A}-\mathbf{B}) = \begin{pmatrix} 0 \\ 2\sqrt{5} \end{pmatrix} - \begin{pmatrix} -2\sqrt{5} \\ 0 \end{pmatrix} = \begin{pmatrix} 2\sqrt{5} \\ 2\sqrt{5} \end{pmatrix} \tag{0.1}$$

$$(\mathbf{A}-\mathbf{B})^{\top}(\mathbf{A}-\mathbf{B}) = 40 \tag{0.2}$$

$$d_1 = \|\mathbf{A}-\mathbf{B}\| = 2\sqrt{10} \tag{0.3}$$

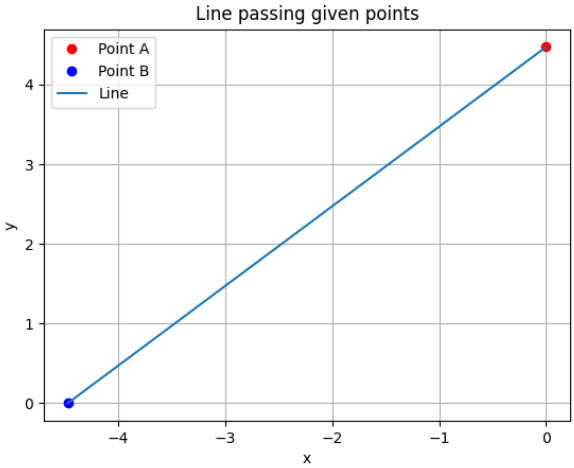

Fig. 0.1: Plot of the line passing through A and B