Assignment-02

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Download all python codes from

https://github.com/suyogtangade/ASSIGNMENT2.
git

and latex-tikz codes from

https://github.com/suyogtangade/ASSIGNMENT2.
git

Question taken from

https://github.com/gadepall/papers/blob/master/
classics/2d−coordinate/
elementsofcoordi00lone_bw.pdf

1 Vector2 Example.1.2

Find the distance between the following pair of points (4,-7) and (-1,5).

2 Solution

Lets Consider

$$\mathbf{A} = \begin{pmatrix} 4 \\ -7 \end{pmatrix} \quad (2.0.1)$$

$$\mathbf{B} = \begin{pmatrix} -1 \\ 5 \end{pmatrix} \quad (2.0.2)$$

The distance d between $\mathbf{A}$ and $\mathbf{B}$ is given by

$$\|\mathbf{B} - \mathbf{A}\| \quad (2.0.3)$$

$$\implies \left\| \begin{pmatrix} (-1) - 4 \\ 5 - (-7) \end{pmatrix} \right\| = \left\| \begin{pmatrix} -5 \\ 12 \end{pmatrix} \right\| \quad (2.0.4)$$

$$\implies \left\| \begin{pmatrix} -5 \\ 12 \end{pmatrix} \right\| = \sqrt{-5^2 + 12^2} \quad (2.0.5)$$

$$= \sqrt{25 + 144} \quad (2.0.6)$$

$$= \sqrt{169} = 13 \quad (2.0.7)$$

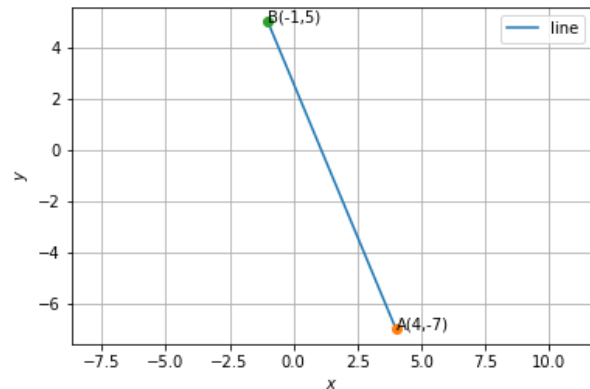The Distance between two points is 13.

Fig. 2.1: Graphical Solution

$\therefore$ This figure verifies that distance between two points is 13.