

# SM5083

## Assignment Number 01

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### 1. CHAPTER II Ex-2 Q.1 III

- 1.1. Find the distance between the following pair of points (66,25) and (99,69).

**Solution:**

let

$$\mathbf{A} = \begin{pmatrix} 66 \\ 25 \end{pmatrix}, \mathbf{B} = \begin{pmatrix} 99 \\ 69 \end{pmatrix} \quad (1.1.1)$$

$$\mathbf{B} - \mathbf{A} = \begin{pmatrix} 33 \\ 44 \end{pmatrix} \quad (1.1.2)$$

let normalisation of vector  $A$  and vector  $B$ =

$$\|\mathbf{B} - \mathbf{A}\| = \|\mathbf{C}\| \quad (1.1.3)$$

$$(\|\mathbf{C}\|)^2 = \mathbf{C}^\top \mathbf{C} = \begin{pmatrix} 33 & 44 \end{pmatrix} \begin{pmatrix} 33 \\ 44 \end{pmatrix} \quad (1.1.4)$$

$$\|\mathbf{C}\| = \sqrt{(33^2 + 44^2)} \quad (1.1.5)$$

$$\|\mathbf{C}\| = 55$$