SM5083
Assignment Number 01

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SM21MTECH12005

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

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

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

normalisation of vector A and vector B=

$$\|\mathbf{B} - \mathbf{A}\| = \mathbf{C}$$

$$(\|\mathbf{C}\|)^2 = \mathbf{C}^{\top}\mathbf{C} = \begin{pmatrix} 33 & 44 \end{pmatrix}\begin{pmatrix} 33 \\ 44 \end{pmatrix}$$
$$\mathbf{C} = \sqrt{(33^2 + 44^2)}$$
$$\mathbf{C} = 55$$