SM5083
Assignment Number 01

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1. CHAPTER II EX-2 Q.1 II

1.1. Find the distance between the following pair of points (11,16) and (23,21).
Solution:
let

$$\mathbf{A} = \begin{pmatrix} 11 \\ 16 \end{pmatrix}, \mathbf{B} = \begin{pmatrix} 23 \\ 21 \end{pmatrix} \qquad (1.1.1)$$

$$\mathbf{B} - \mathbf{A} = \begin{pmatrix} 12 \\ 5 \end{pmatrix} \qquad (1.1.2)$$

let normalisation of vector A and vector $B=$

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

$$\|\mathbf{C}\|^2 = \mathbf{C}^\top \mathbf{C} = \begin{pmatrix} 12 & 5 \end{pmatrix} \begin{pmatrix} 12 \\ 5 \end{pmatrix} \qquad (1.1.4)$$

$$\|\mathbf{C}\| = \sqrt{(12^2 + 5^2)} \qquad (1.1.5)$$

$$\|\mathbf{C}\| = 13$$