East West University

Department of Mathematics and Physical Sciences (MPS)

Course Title: Linear Algebra and Complex Variables, Course Code: MAT 205

Time: 30 Minutes **Quiz 2** **Marks: 10**

Q1. Find the eigenvalues and eigenvectors of the matrix [5]

$$A=\begin{bmatrix}5 & -1\\ 3 & 1\end{bmatrix}.$$

Q2. Let T: $\mathbb{R}^3 \rightarrow \mathbb{R}^3$ be the linear operator defined by [5]

$$T(x,y,z)=(x+2y-z,2x+y+z,y-z).$$

Find the rank and nullity of T.