FIELD	
NAME	
INDEX NUMBER	
L=Last 3 Digits of the Index Number	
M=Number obtained by taking Mod 2 (remainder after dividing by 2) of each digit of L	
Write this number M on the diagonal of the matrix *A*, starting from the top left hand corner $A=\begin{pmatrix} \boxdot & 1 & 2 \\ 1 & \boxdot & 1 \\ 1 & 2 & \boxdot \end{pmatrix}$. Let $T:\mathbb{R}^3 \to \mathbb{R}^3$ be a linear transformation defined by $T(u)=Au$ for $u=\begin{pmatrix} x \\ y \\ z \end{pmatrix} \in \mathbb{R}^3$.	

Q1. Find a basis for $\ker T$ and calculate $\dim(\ker T)$.

Solution:
See Test 6-Q1-Solutions

Q2. Find a basis for $\mathrm{ran}T$ and calculate $\dim\ (\mathrm{ran}T)$.

Solution:
See Test 6-Q1-Solutions