1. Determine rank of the matrix .
2. For what values of k the system of equations has a non trivial solution

x+2y+3z=kz

2x+y+3z=ky

2x+3y+z=kz

1. Solve the system of equations

and using this find the inverse of .

1. Diagonalise A=
2. Let be a basis for V.Examine if is a basis of V.
3. Show that the set forms a vector space over a field .What is the dimension of over .
4. Prove that for a matrix of order row rank of A =column rank of A.
5. Find algebraic and geometric multiplicity for each eigenvalues of A=
6. If is a linear map which map the basis vectors (0,1,1),(1,0,1),(1,1,0) of to the vectors (1,0,0),(0,1,0),(0,0,1) respectively.Find rank and nullity of T.