Linear Algebra

CSE DEPT.

Set-3

1. Define a linear mapping. Show that the mapping ℝ defined by in linear.
2. Define Vernal of a linear mapping. Let be the linear mapping defined but .
3. Find the basis and the dimension of kernel of
4. Image of T.
5. Define image of a linear mapping. let → be a linear mapping then show that the image of F is subspace of
6. find a basis and dimension of the subspace W of ,where
7. Define direct sums. Show that the vector space V= is not the direct sum of the subspace
8. and
9. Define and of a linear mapping Show that is a Subspace of U.
10. Determine whether or not the mapping F is linear, Where define but
11. Suppose and are linear mapping over a field . The mapping and be defied by and . Show that and are linear.
12. Let be defined by and Find .
13. Let , and be defined be defined by , and show that are linearly independent.
14. Define a linear mapping; Kernel and Image of a linear mapping. Suppose is a linear mapping. Prove that
15. the image of F is a subspace of U.
16. the kernel of F is a subspace of V.
17. Find where is defined by and
18. Show that the mapping defined by is linear.
19. Define a linear mapping and kernel. Let f and g be defined by and . Find) and ). Aslo find formula for and .