

Name: Ogbeide Eromosele

Jonathan

Course : math 204

Department : computer science

Level :200

1i) A **linear transformation** is a function from one vector space to another that respects the underlying (**linear**) structure of each vector space.

ii) The **rank of a matrix** is defined as the maximum number of linearly independent column vectors in the **matrix**

$$2) \begin{pmatrix} 1 & 2 & 8 \\ 4 & 7 & 6 \\ 9 & 5 & 3 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 2 & 8 \\ 4 & 7 & 6 \\ 9 & 5 & 3 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 2 & 8 \\ 4 & 7 & 6 \\ 9 & 5 & 3 \end{pmatrix}$$

$$= 1(21 - 35) - 2(12 - 54) + 8(20 - 63)$$

$$= -14 - 2(-42) + 8(-43)$$

$$= 14 + 84 - 344$$

$$= -274$$

Therefore the matrix is not singular