Chapter 1: Matrices and Eigenvalue Problems

Some Important results of Matrices:

Dit is possible that product of two matrices

AB is defined but BA may not be defined

$$A = 2 + 3$$

$$A = 3 + 4$$

$$A = 2 + 3$$

$$A = 3 + 3$$

$$A$$

$$B \rightarrow 4\times B$$

$$A \rightarrow 4\times 4$$

$$B \rightarrow 4\times 4$$

$$AB = \begin{cases} 3 \times 3 \end{cases}$$

Pach other.

DAB = 0 then AB may not be zew
$$|xy = 0|$$

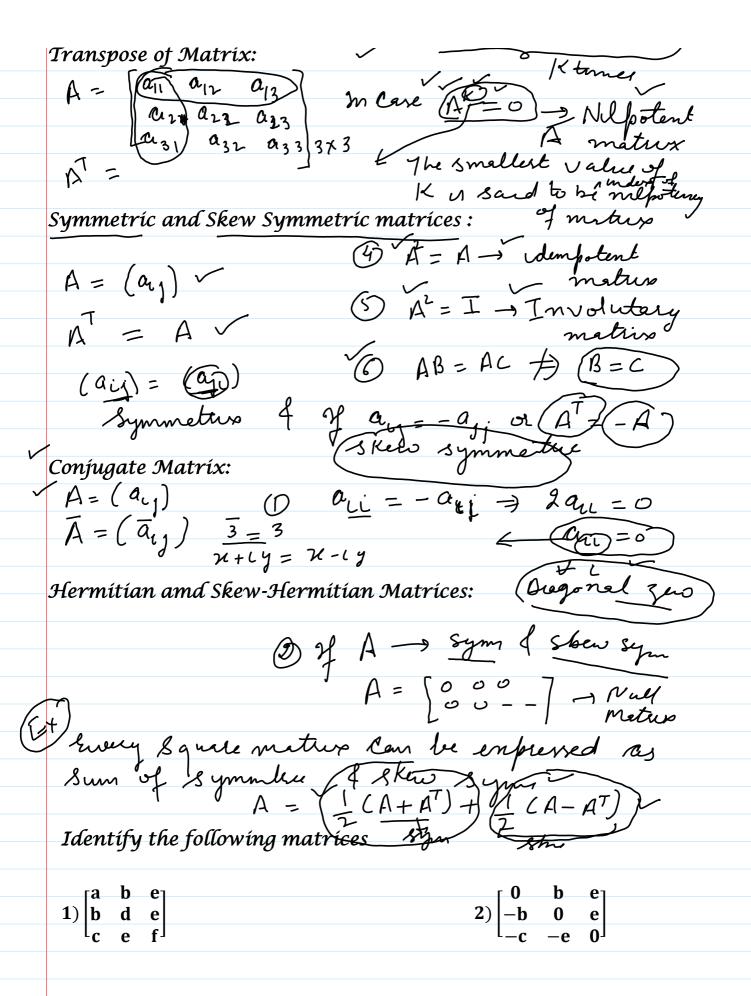
$$A = \begin{bmatrix} x & 0 \\ y & 0 \end{bmatrix} AB = \begin{bmatrix} 0 & 0 \\ a & b \end{bmatrix}_{2\times 2}$$

$$= 0 \text{ or } y = 0$$

$$AB = \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$$

$$AK = A \times A + A \times - \cdots \times A$$
Transpose of Matrix:
$$A = \begin{bmatrix} a_{11} & a_{12} & a_{12} \end{bmatrix}$$

$$A = \begin{bmatrix} a_{11} & a_{12} & a_{12} \end{bmatrix}$$



$$3)\begin{bmatrix}1&2+4i&1-i\\2-4i&-5&3-5i\\1+i&3+5i&6\end{bmatrix}$$

$$4)\begin{bmatrix}0&2+4i&1-i\\-2+4i&0&3-5i\\-1-i&-3-5i&0\end{bmatrix}$$

If
$$A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ a & b & -1 \end{bmatrix}$$
 then A^2 is equal to

a) unit matrix

b) null matrix

c) A

d) -A

Hermitian and Skew Hermitian

In case of Hermetien matter the elements on the man diagonal are real nrs

30