## Rank of Matrix (Echelon form)

Let A 13 matrix.

Zero Row: All dements are zeros in now then
the row is called zero row. Ex [0 000]

Non zero Row: At least one element is non zero
demant in row then the row is called non zero row.

Ex: [0 0 1 0]

Rank of matrix A = number of mon zero would of A Pank is directed by P(A) (OV) r.

Rows are denoted by R = R1, R2, R3, F10---

Elementary transformation of matrix: the following operations, three of which refer to rows and Three to columns are known as elementary transformations.

- . 1) The interchange of any two rous (columns)
  - W) The multiplication of any row (columns) by a non zero number.
  - III) The addition of a constant multiple of the elements of any row (column) to the corresponding elements of any other row (column).

Eche don form; -

Ex: 1) A = 
$$\begin{bmatrix} 3 & 4 & 5 \\ 3 & 2 & 5 & 5 \\ 3 & 3 & 3 & 4 \end{bmatrix}$$

So  $\begin{bmatrix} 1 & 2 & 3 & 4 \\ 3 & 2 & 5 & 5 \\ 3 & 2 & 5 & 5 \end{bmatrix}$ 

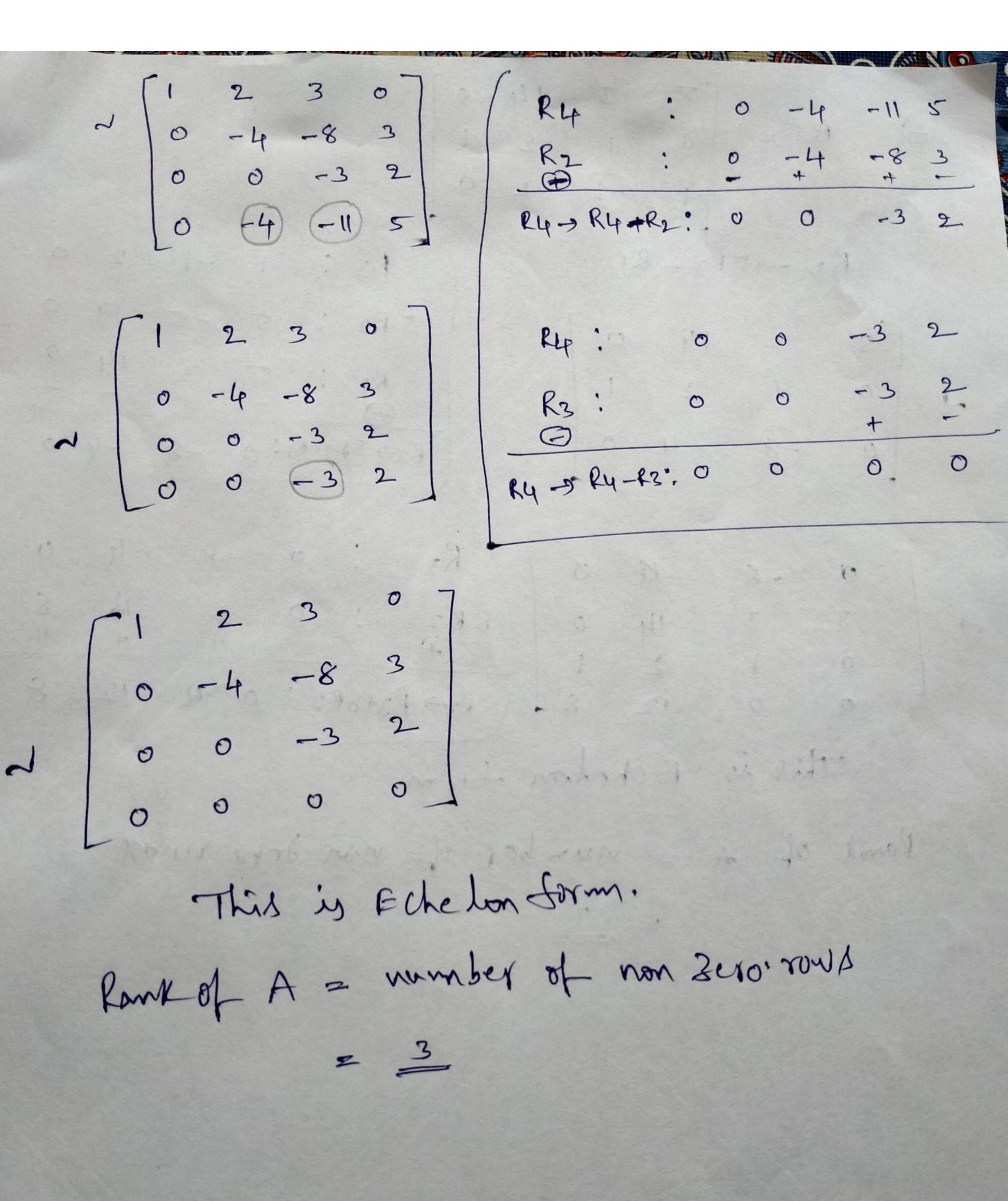
Reduce the matrix  $A = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 2 & 3 & 2 \\ 4 & 3 & 2 \\ 6 & 7 & 5 \end{bmatrix}$  into echelon this fam.

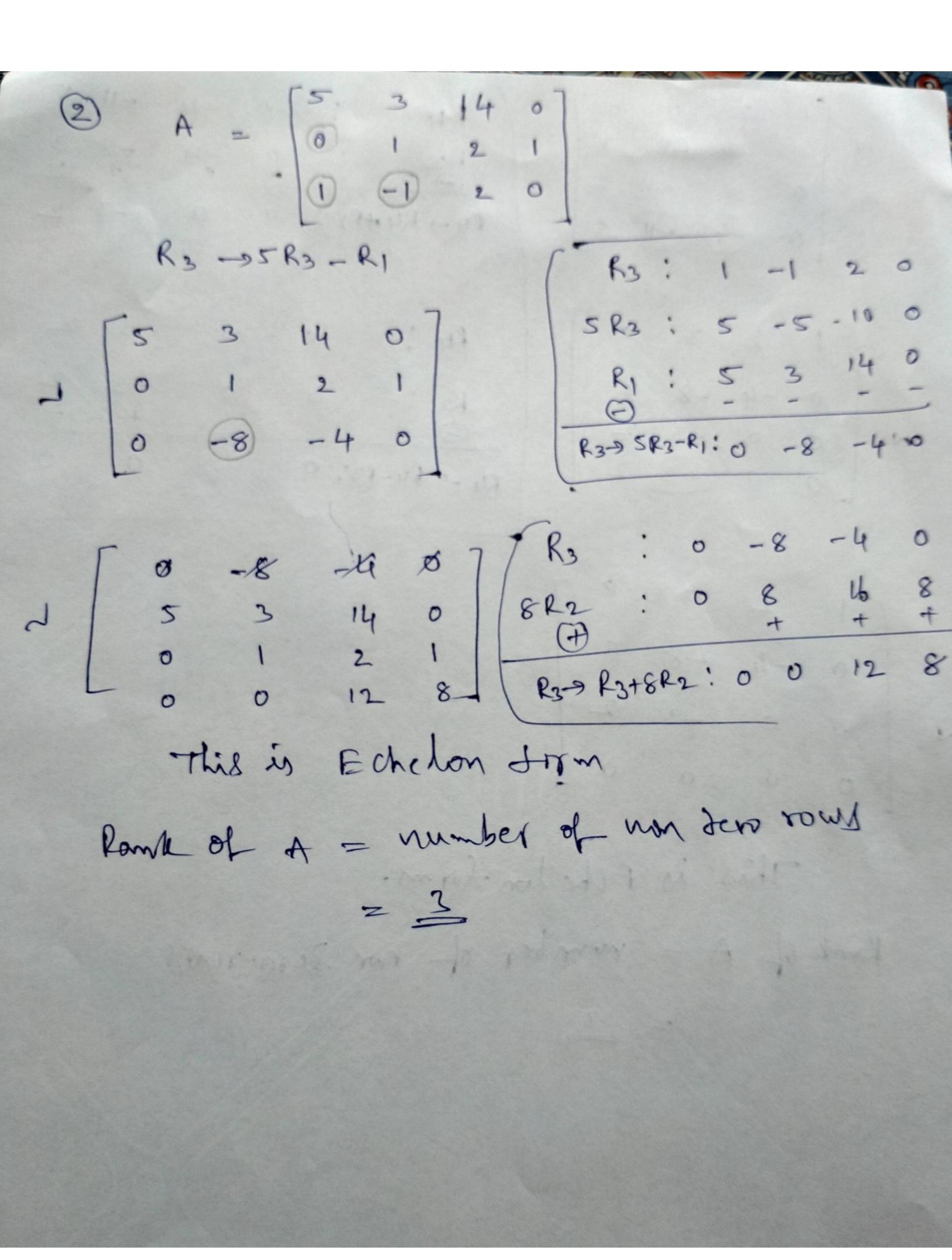
A =  $\begin{bmatrix} 1 & 2 & 3 & 0 \\ 2 & 4 & 3 & 2 \\ 3 & 2 & 1 & 3 \\ 6 & 7 & 5 \end{bmatrix}$  into echelon this fam.

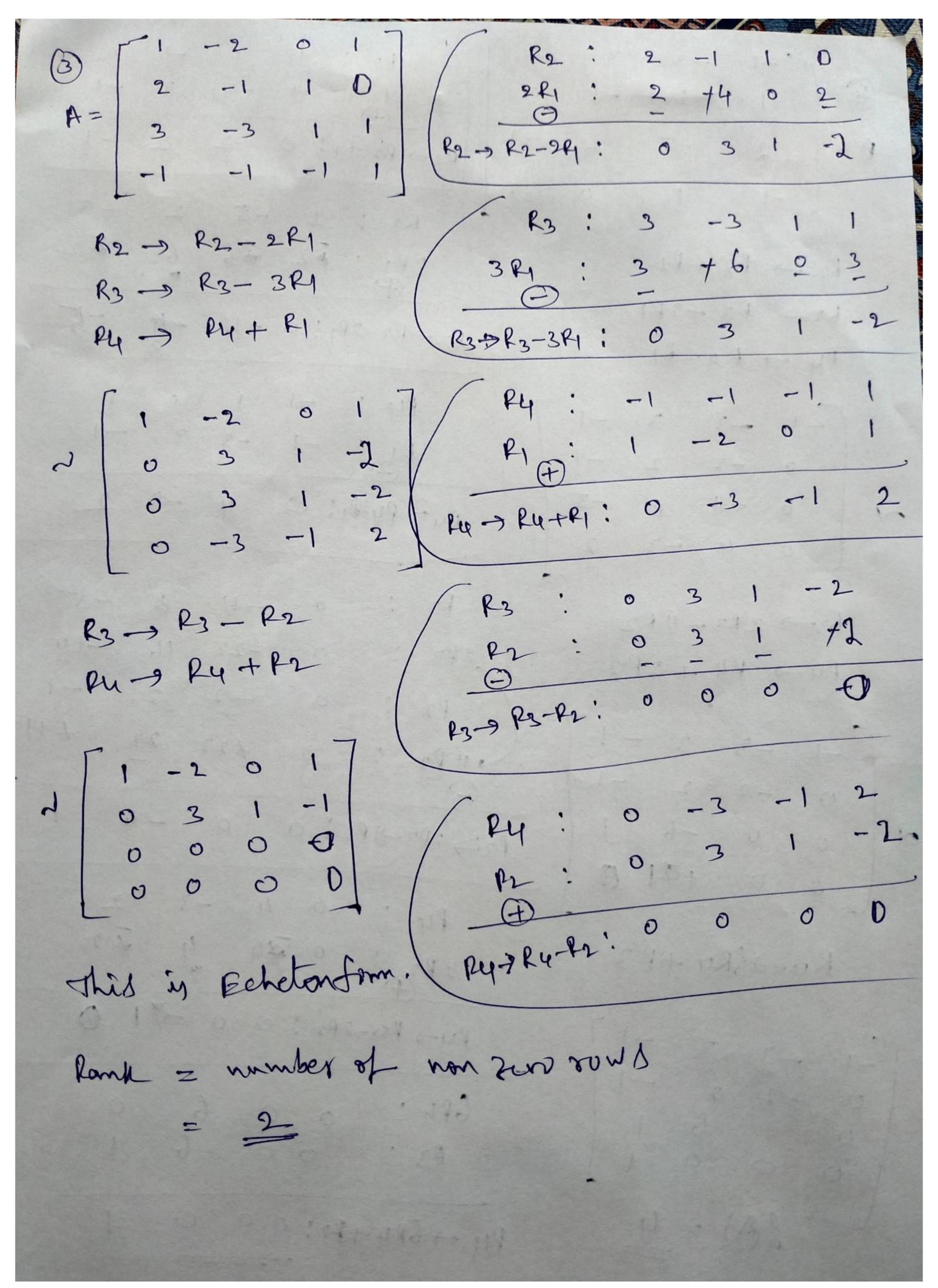
A =  $\begin{bmatrix} 1 & 2 & 3 & 0 \\ 2 & 4 & 3 & 2 \\ 3 & 2 & 1 & 3 \\ 6 & 8 & 7 & 5 \end{bmatrix}$ 

Representation of the fam.

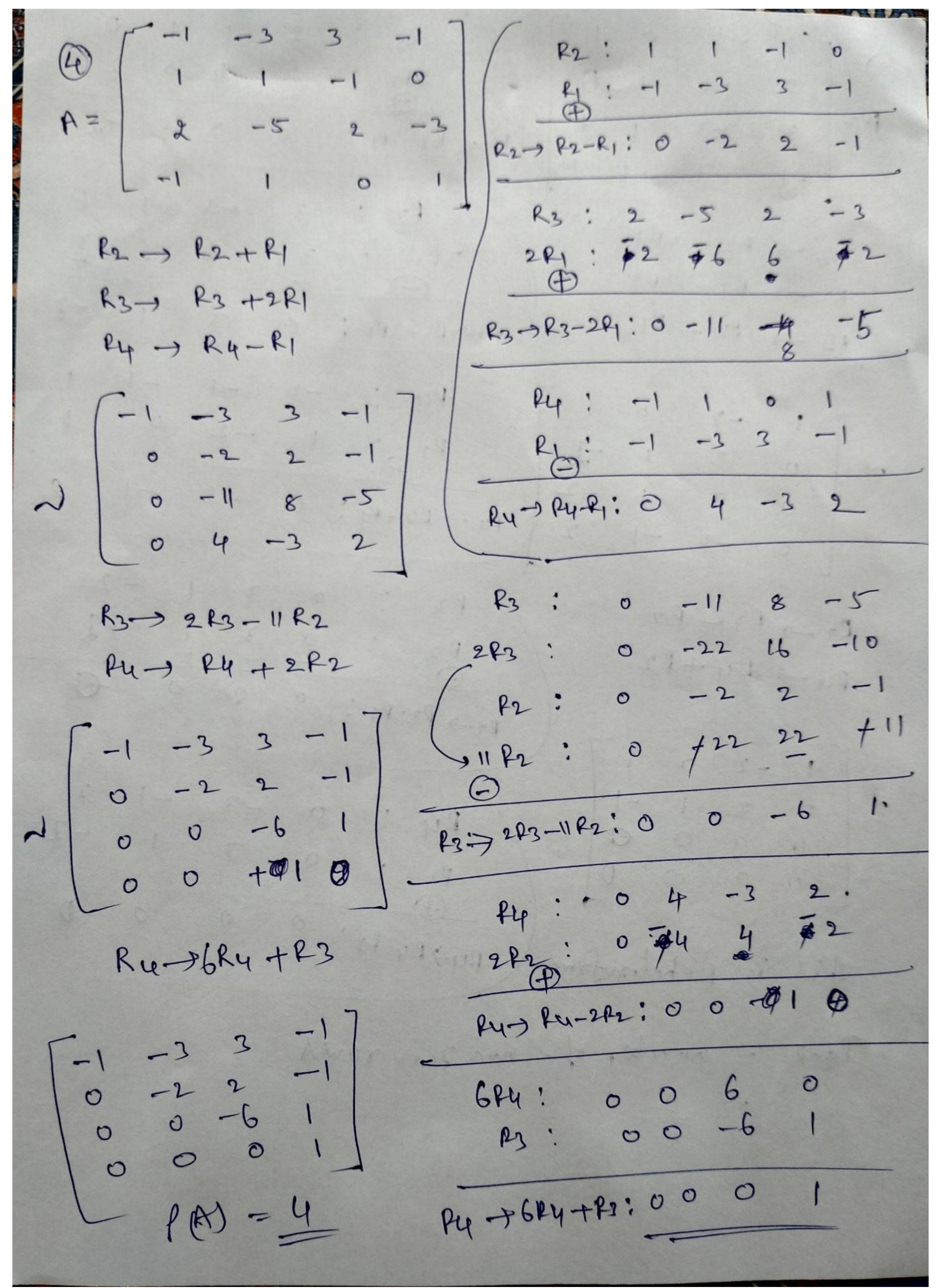
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