Section 2.1

Row Echelon Form and Rank of a rectangular matrix

The goal is to use the Gaussian Elinnination process to reduce the rectangular system (using elementary transformations) to something "like taiting ular", that is triangular with the pirots leading the rows (and zeros before them).

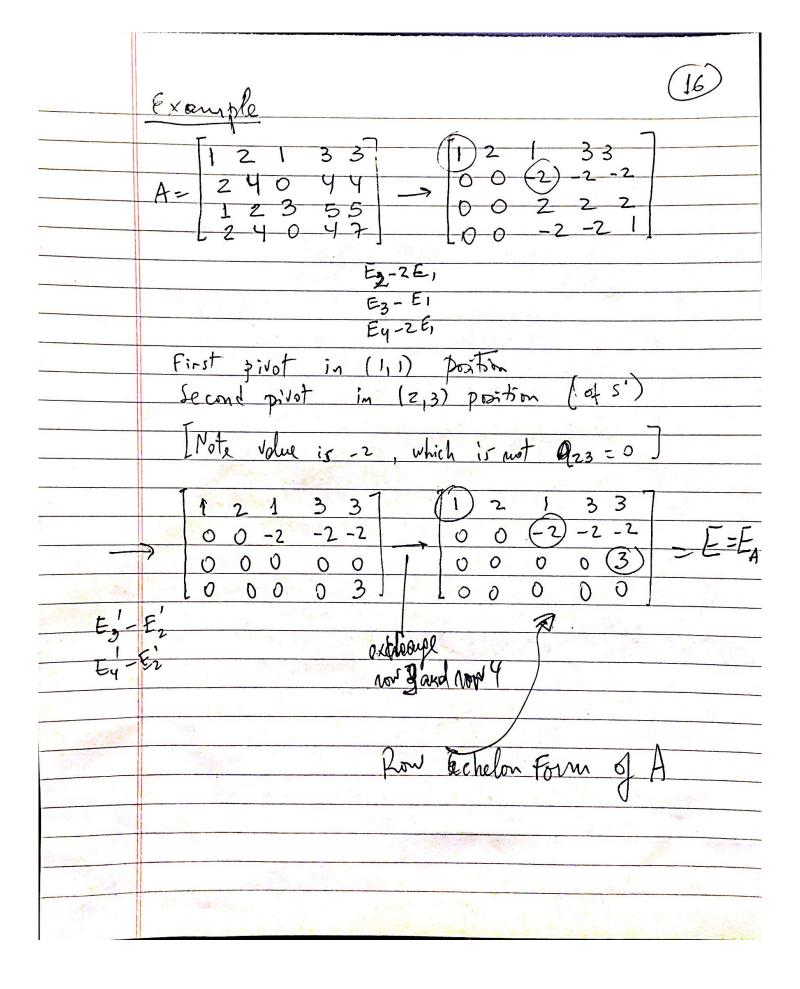
Process: - If (nonzero) prot. Eliminate below

- If zero in prot point on and below there is some nonzero (in same column).

Do now interchanges

- If below there are all zeros, more to the wext column

(repeat if necessary)



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Note. The Echelon form of a motrix is unique in the sense that the number and location of the givets is fixed.

Definition Rank A = # of pivots in EA

= # of nonzeros rows in EA

Basic columns of A, are the columns where the pivots are.

In example columns 1,3,5, that is,

Rank of a matrix = # of basic columns

The other columns are non-basic columns. In example these are columns 2, 4.

